Vol. 71
No. 3

Gleanings
in Bee Culture

March
1943

Care and Introduction of Package Bees

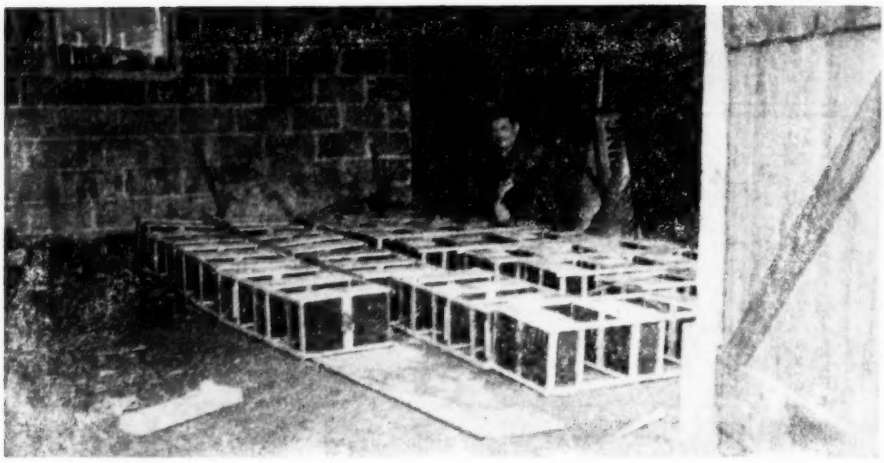
By Edwin J. Anderson

The package bee business is now about 25 years old. During this quarter century, the package industry grew from a small experimental enterprize to a business of sizable proportions. Memories are still fresh of the days when the beekeepers fought postal regulations permitting bees to be shipped by mail. This move was made to reduce the excessive transportation costs demanded by the express agencies at that time. Since then express rates have been reduced throwing the business back in their direction. Many still recall the first postal shipments and the commotion they caused when received by the local postal authorities. This fear on the part of postal employees caused considerable amusement among the beekeepers. The early experiences were not always so pleasant, however, for sometimes a very irate postmaster would call an unsuspecting beekeeper and demand that he come to the post office at once and take his bees away since many had escaped and chased all the employees from the post office.

The writer remembers well the following experience encountered at Chambersburg, Pa.: A large shipment of package bees was scheduled to arrive there the last Friday in April. The writer had promised to stay over and help introduce a few packages at each of several orchards. As often happens, the bees were delayed but finally arrived on Sunday morning. An early call came to the hotel and a greatly disappointed County Agent reported the arrival of the shipment. He stated that most of the bees were dead and it looked to him as though the bees were a total loss. This condition was the more serious since the bees were needed for pollination and apple trees were already in bloom.

A hurried examination showed all the bees dead in about ⅓ of the packages, ⅓ in bad shape, and the remainder o.k. A statement of bad shipment was obtained and two disappointed workers loaded the bees into the County Agent's car and started for the country. Deliveries were made to equally disappointed growers who were depending upon the bees to provide a crop of fruit.

When the last packages were unloaded, the source of the trouble was located. The two holes placed in the feeder cans had been punched on opposite edges of the bottom of the cans instead of in the lids. This arrangement permitted the syrup to run out of the cans either when there was a little leak of air around the lid or when the cans were not standing perfectly level. Most of the syrup that was left in the good packages ran out, smeared the bees, and covered the upholstery of the car and a rain coat with the syrup. The back of the car was indeed sugar coated. The County Agent was ready to



A large shipment of packages of bees just received from the express office.

swear off bees for the rest of his life.

Handling Packages on Arrival

Considerable of the uncertainty has been removed from the package business in recent years. Several methods of handling packages have been developed and are in general use. As with any enterprize there are a number of ifs and ands still connected with the care of package bees. Manipulation of packages must vary somewhat to meet weather and other local conditions. Some times packages arrive when there is snow on the ground; at other times the temperature may be above 70° F. Hence the care of packages must vary accordingly.

There are several principles which are essential to successful handling of package bees and they might be stated briefly before a general discussion on introducing is undertaken. These essentials can be listed as follows: (1) Never let package bees become overheated or remain in a hot place; (2) avoid chilling the queen; (3) feed the bees well when they arrive and again before they are introduced; (4) place package bees only on select worker combs that are free from AFB or on full sheets of foundation; (5) feed them continuously until they have seven frames of brood; (6) never introduce package bees into a hive where robbers are working; (7) give the colony additional super space when all but one of the combs are occupied or when all but one of the sheets of foundation have been drawn; (8) package bees should be ordered to arrive about the time the first pollen is available from maple or about April 15th for most of Pennsylvania. If these rules are followed, the type of procedure used in introducing package bees will be of minor importance. It would seem advisable, however, to describe one or two methods of introducing package bees so that the new beekeeper will have a better idea about how to tackle the job.

The beekeeper should not forget to feed the bees shortly before they are to be introduced into the hives.

Prepare the hive by taking three or four frames from one side of the hive body. Open the package quietly, then remove the feeder can and the queen cage. Pry off the tin that covers the chamber of candy and hang the queen cage about two inches from the top of the frames or combs between the first and second frame from the package. The queen cage may be hung on a wire or string. The bees will chew through the candy and release the queen in a day or two. If for some reason the candy is all out of the cage entrance a small bunch of grass may be pushed into the queen cage to take the place of the candy. Place the package in the empty space and cover the hive with an inner cover. Provide each colony with a pail of sugar syrup (1½ parts white sugar dissolved in 1 part of hot water). The syrup should be poured into a 5-pound friction-top honey pail with about six small holes in the lid. Invert the pail above the opening of the inner cover and

place an empty super and lid on to protect the feeder can. The bees will require a can of syrup every 4 or 5 days when they are placed on foundation or a quart jar at the same intervals when placed on drawn combs. The normal requirement of a single package placed on foundation is 20 pounds of sugar and on drawn combs 15 pounds of sugar. If the beekeeper tries to save sugar and reduces the quantity fed, he will lose many times that amount in honey or may even fail to get any surplus at all. A heavy honey flow may make a little difference in the amount of sugar required.

The queen cage and empty package should be removed about five days after the bees were introduced and the colony checked for eggs or the queen. The frames formerly removed should be returned at the same time.

Install Package Bees Late in Day

Regardless of the system used it is safer to introduce package bees towards evening or at a time when bees are not flying freely. Under these conditions they have the hours of darkness to become adjusted to their new home and there will then be less danger of drifting, disorganization, and loss of queens.

A second system of introducing package bees and one which I believe gives greater satisfaction under a variety of conditions is the shaking method. It is somewhat difficult to shake bees from the cage until you get the knack of it but there is less danger of the queen being chilled should there be a cold snap at the time the bees are introduced.

Remove four frames or combs from one side of the center of the hive body, then sprinkle the bees in the cage with sugar syrup before the package is opened. The feeder can works very well as a sprinkler. Do not sprinkle them with excess quantities of syrup or they will all become sticky and get chilled and die before they can form a cluster. Remove both the lid and the feeder can from the package, sprinkling the bees at the instant the can is removed. The syrup discourages them from flying out of the cage in large numbers as they normally do. The few that fly out may drift but are not lost since they will return or enter another hive. If the hives are placed six feet or further from each other there will be less drifting than when they are close together.

Remove the tin from the candy end of the queen cage and hang the cage near the center of the hive and two inches from the top of the frames. Shake the bees from the package into the empty space. The package

Opening the cage

Shaking bees out of the cage

should be jerked back and forth with quick sharp motions to dislodge the bees from the cage walls. Jarring the package with the butt of a screwdriver will help dislodge them. Return the four frames or combs as soon as the bees crawl on to the frames and place the inner cover above as before. Feed every four or five days. The queen cage should be removed in about a week and the combs examined for eggs. If they are present, the queen has been accepted. If neither eggs nor the queen can be found another will have to be ordered at once. A pound of bees ordered with the queen will help make up for lost time.

A Few Words of Precaution

If the weather is cold or below 40° F. remove two or three frames at one side of the hive and place two one-quart jars of hot water in the empty space. The heat from the jars warms the hive and gives the bees time to get organized without being chilled. The last handful of bees in the cage should be shaken on top of the frames directly above the queen cage. These bees cluster about the queen immediately and keep her warm. If the weather is hot more syrup will have to be sprinkled on the bees to prevent them from flying about when they are shaken into the hive. If the package bees are stored in a cool dark place then introduced before they get warm, they will handle better than if they are rushing about in the cage.

If one inch or more of dead bees are observed on the bottom of the cage when the bees are examined at the express office, a statement of bad shipment should be obtained and sent to the shipper in the South so the loss can be replaced.

The bees should be fed as soon as they arrive and the cages stored in a cool dark room at about 50° to 58° Fahrenheit until the bees are introduced.

There is some question as to whether a two or three pound package is the more economical. As a rule, a three-pound package will build up in about a week less time than is required for the two-pound size. The queen is, however, of greater importance than the size of the package.

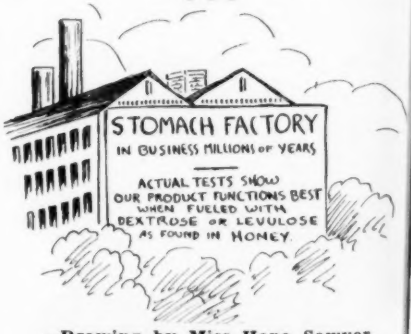
Package bees require careful handling. Results obtained from them vary greatly depending upon the care and amount of food given the bees Results obtained from different package bees introduced in the same locality may vary as much as 70 pounds per colony. No beekeeper can afford to buy package bees without first learning how to care for them, otherwise his investment may turn out to be a poor one. When the surplus flow comes after June 20th, package bees, skillfully handled, often produce more surplus than wintered colonies.

Another view of shaking bees from the package.

State College, Pa.

[Mr. Anderson's method does very well for his state and latitude. Farther north where shipments sometimes arrive during a cold snow storm it may be necessary to install packages in a cellar and put the hives outdoors later when the weather moderates. In the April issue we hope to have a story covering this.—Ed.]

• • •



—Drawing by Miss Hope Sawyer, Ithaca, N. Y.

Recent Investigations Show Need for Bees in Production of Vine Crops

By J. C. Kremer

Michigan State College of Agriculture, East Lansing

The necessity of honeybees in Michigan's 25,000 acres of pickling cucumbers has been demonstrated by growing plants in screen cages at the Michigan Agricultural Experiment Station. One year 20 plants grown in cages without bees produced 198 fruits while 20 plants in the open field produced 500 fruits. Another season 20 field plants pollinated by bees produced 492 more fruits than the caged plants. In the latter year, 92 percent of the fruits from the caged plants were misshaped.

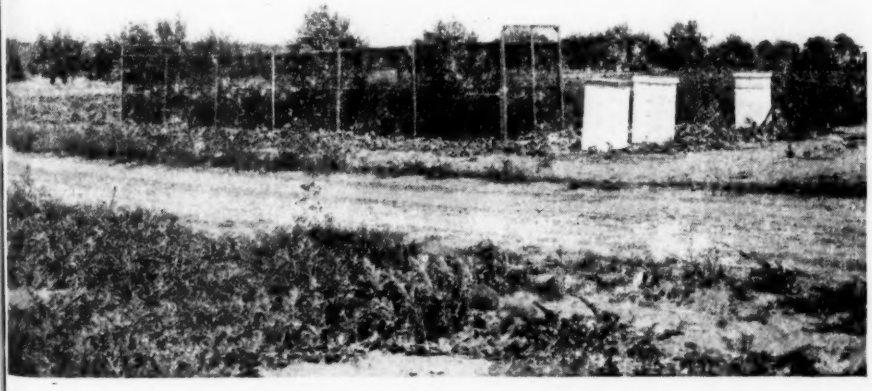
These preliminary experiments were carried further. Female flowers were tagged daily under four different sets of conditions. The results of one of these experiments is reported in the following table:

	Caged Plants		Field Plants	
	Not Pollinated	Pollinated by hand	Bees only	Bees plus hand Pollination
Total flowers tagged	997	458	834	631
Abortions (per cent)	94.4	3.1	5.4	2.8
Undeveloped fruits (per cent)	5.3	5.2	1.7	3.0
Straight fruits (per cent)	(1 seedless fruit)	65.5	73.4	71.3
Stem end constrictions (per cent)		18.6	12.5	14.3
Blossom end constrictions (per cent)	(2 seedless fruit)	6.6	4.0	5.7

Crooks

The data in the above table show that in cages where the flowers were not pollinated only three of approximately 1,000 flowers set fruit and these were seedless. In another cage where the flowers were pollinated by hand over 90 per cent set fruit and the results were similar to those obtained in the field. The field plants pollinated by bees gave only the highest percentage of straight fruits, even higher than that obtained by supplying additional pollen to the flowers on which the bees were allowed to work. This indicates that under most conditions the bees carry sufficient pollen to the stigmas of the female blossoms for proper pollination provided conditions are favorable for germination and the growth of the pollen tubes. A single pollen tube must grow through the tissues and unite with each egg cell of each of the 300 to 400 seeds in the fruit if they develop.

Hourly observations were made



Screen cages used in cucumber pollination studies at the Michigan Agricultural Experiment Station.

with a microscope to determine the effects of temperature, humidity, and sunshine on bee activity, pollen dehiscence, nectar secretion and other factors. Considerable data on these subjects was collected but a thorough study has not as yet been made of them. It was found that the bees did not appear in the cucumber fields until after the pollen had begun to dehisce and nectar was being secreted. Under normal climatic conditions this occurred between 6 a. m. and 9 a. m. but varied considerably with temperature. Apparently a temperature of about 65° F. was required for pollen dehiscence and a slightly higher temperature for secretion of nectar. The rate of pollen tube growth was also studied both in the field and in the laboratory. Little or no germination or growth was observed at temperatures below 65° F. and approximately four days are required for the pollen tubes to reach the ovules near the stem end of the fruits. It is thought that anything interfering with the germination and growth of the pollen tubes through the ovary may be responsible for the constrictions in the various regions of the fruit.

Little or no bee activity in cucumber fields give these misshaped pickles.

While the data reported above deal largely with pickling cucumbers the writers have continued their observations with other plants including cantaloups, watermelons, gherkins, pumpkins, and squash. Bee activity in these plants is influenced by competition with other plants, floral structure, and climatological factors which influence the anthesis, another dehiscence and nectar secretion.

Beekeepers' exhibit set up in the Fifth Regiment Armory in Baltimore, September 19 to 22, 1942, as part of the Victory Garden Harvest Festival. We sold honey at the booth and all of our proceeds were turned over to the manager for the benefit of the armed forces.—George J. Abrams, Specialist in Apiculture, College Park, Md.

Making Packages Produce

By Grant D. Morse, Ph. D.

Almost every beekeeper wants at some time to secure new colonies of bees. Usually he wants to secure these new colonies as inexpensively as possible. Also, he usually wants them to grow strong and produce enough honey during the spring, summer, and fall of the same year in which he starts them, to carry themselves through the winter. He may even want them to produce a surplus that first season. How can he accomplish these purposes?

Starting with packages is the answer. To be sure, a beekeeper may buy colonies of full strength; but that entails a heavy expenditure, as few people are willing or compelled to dispose of good strong stocks at low prices. Also, a beekeeper may purchase strong packages of four or more pounds of bees and have them shipped early in the season from a warmer climate. Such purchases normally assure good results at an early stage. But I have in mind the problem of securing strong colonies by the close of the season in the least expensive manner. There will be those who will say there is no inexpensive way, will maintain that it's cheaper in the long run to pay the full price at the beginning and not try to keep the expense down. With those who want to do it that way, with those who believe that there's no good way to get the desired results inexpensively, I have no quarrel. I, too, agree that it's difficult; but I suggest consideration of the following ideas.

A package of bees will do wonders if you give it the right opportunities. Best of all, that nucleus doesn't need to be a huge one if the right conditions are present. In all that follows in this article, I will try to take into consideration the varying effects of influences caused by differences in location. But it is very difficult to account for all such variations. The writer and the reader must, however, recognize that a multitude of such variations do prevail. Note, too, that this article has chiefly in mind the getting of good results the first season at the least possible expense.

An Early Start is Important

The first factor to take into account is an early start. Time is required to bring young bees into existence. Time, if given a chance, helps the builder of new young colonies keep down expense. The man who can afford to purchase the accomplished results does not need time on his side. Time gives the queen with a small force of bees an opportunity slowly to build up her numbers, yet reach the goal at the same time as the strong colony. The strong colony runs the risk of dissipating its numerical strength as it goes along. How early shall the beekeeper start his small package of bees? The most comprehensive answer is: Just as early as all the essential circumtances permit. In other words, they may be started (1) as early as the weather makes handling reasonably safe; (2) as soon as they can be safely shipped; (3) at a season when they are available. You might ask, is there any advantage in starting them earlier than a date on which the field bees can begin gathering nectar? Yes, perhaps there is, if the starting date is not too considerably in advance of the earliest flow of nectar, and provided they can be installed on drawn combs with either honey or feed pails available to supply their early food needs. Why not?

Regularly established colonies in cold climates begin the cycle of brood production long before nectar is available in the field. Small packages if installed before the first nectar flow must have reasonable protection against the elements. Being small they are particularly sensitive to cold weather, especially cold windy weather. Starting a package early means among other things that it's ready to go to work as soon as a fair day presents itself. The beekeeper who waits to install small packages until after the good weather has arrived has lost some time for his colony. Even veteran beekeepers have to set a date in their minds beyond which it is unprofitable to initiate a new colony. Here in our latitude it is the fifteenth of June, in most years. In your location your latest starting date is likely pretty close to the beginning of your principal honey flow. If you live in a locality where the flow is exceptionally long, or where there is a series of rather extended flows, that alters matters. We find here that colonies started after June 15 seldom store

enough honey to carry themselves through the winter. If a colony can't store its own winter food supply, it's pretty much like a pauper relative—there's not much interest in its existence. Here, our earliest profitable starting date for small packages is around the first of April. The tenth of April is commonly safer.

Packages Should Be Fed

A second essential factor in the success of small packages is the provision of an adequate food supply. To be sure, this may entail so much expense as to nullify the advantages of early installation. And if so, the beekeeper must console himself with a later start—one deferred to a time when free food can be carried in by the worker bees from the blossoms.

But even then, a package that is stimulated by food fed to it by the beekeeper in the form of combs of honey or sugar syrup will flourish much more successfully than one that uses its workers to bring in the food. A small package labors under disadvantages. If these can be compensated for inexpensively, it will thrive. It is frequently difficult for beginners to realize that so large a percentage of the working days of a bee colony are so unfavorable to flight as to keep the working force confined to the interior of the hive. Bees seem to have an instinctive sense that directs them not to produce more brood than the available food supply will maintain. Experienced apiarists know that giving sugar syrup in the spring even to a colony of full strength will usually accelerate its brood production. The faster a small package can produce and nurture brood the better is its chance to become strong enough to store a surplus when the chief honey flow arrives.

If the beekeeper has combs of honey on which to start packages, I think they are better than sugar syrup. However, sugar syrup is satisfactory. There are several reasons why honey is better: For one matter, it is immediately available to the small cluster. They don't have to carry it down. Also, it is a bit more reliable: there in no danger of its running away, as sugar syrup can so easily do; feed pails can become clogged, too. Further, the bees have no method of measuring the reliability of the source when sugar syrup is fed to them. If combs of honey are given they seem to have ways of measuring the quantity of stores; not so with feed pails. The use of combs of honey entails the employment of less equipment. Stealing is also less likely to occur.

Drawn Combs are Necessary

It is substantially impossible, and certainly impracticable, to start early packages on sheets of foundation. It can, of course, be done later in the season. But even then any beekeeper will be well repaid for the expenditure entailed in securing drawn combs. The reason is that drawing out foundation means the bees must manufacture wax. For every pound of wax produced, they must consume about sixteen pounds of honey. The manufacturing process calls for the expenditure of work that the personnel of a small package cannot afford to make. Their efforts need to be expended in cleaning the cells, bringing in pollen, caring for the eggs, feeding the young bees, keeping the brood warm, feeding the queen, and guarding the entrances. Drawn combs are likely also to contain some pollen stores. If such a supply is present, the small nucleus is not compelled to dispatch its precious numbers out into unfavorable weather to gather this vital element. It is amazing how bravely bees will venture forth in weather that is unfit for them if pollen is needed. Careful observation will disclose how difficult is the task of a worker bee that goes out in early April or March winds to hunt out the sparse sources of scanty pollen. In this latitude (100 miles north of New York City) they begin such trips about the fifteenth of March. Last spring I saw pollen carried in on the seventeenth of March. The early gathering of pollen takes its toll of the strength of the nucleus, too. Many of the early gatherers of pollen never return to the hive.

The Housing of the Package Needs to be Carefully Prepared

The smaller the package, the more restricted its housing quarters should be early in the season. Many beekeepers find nucleus boxes useful in place of hives of the regular dimensions. I like them because they are portable. They have the advantage, too, of being small enough to enable the package to keep warm. If regulation hives are used, an inner board may be placed next to the third or fourth frame, and a burlap bag stuffed into the remaining space. An entrance cleat with a very small

Continued on page 185)

New Information on Honey*

By M. H. Haydak and M. C. Tanquary

University Farm, St. Paul, Minn.

[When I visited Dr. Tanquary and Dr. Haydak in July at the University of Minnesota, at St. Paul, the former showed me showcase after showcase of bee exhibits in his laboratory which he used in his classwork before his students in bee culture. These are shown with this article. Dr. Tanquary then explained what they had jointly been doing in their studies on honey, and how he had induced Dr. Schlutz (then at the University of Minnesota) to undertake some research work, testing out the virtues of honey as a food for small children. After Dr. Schlutz had left Minnesota and had gone to the University of Chicago, Dr Tanquary again induced him to continue his work at Chicago,—which he did. The final result of this work is here more fully elaborated upon for the first time. This work, be it noted, is now accepted by the American Medical Association, thanks to Mrs. Harriett M. Grace, of the American Honey Institute. (See Page 280 Gleanings for last year.) We are now glad to present the paper by Drs. Haydak and Tanquary, which should be read very carefully.—E. R. R.]

There has never been any doubt in the minds of beekeepers that honey is an excellent food product not only because it contains glucose and fructose, the two simple and easily absorbable sugars, but because of certain qualities which an ordinary mixture of such sugars does not possess. Unfortunately claims for the superior qualities of honey had not been supported by facts gained under strictly controlled experimental conditions and therefore were rightly disputed. During the past several years a series of experiments on the food value of honey have been conducted at the University of Minnesota and elsewhere. The purpose of this article is to acquaint the beekeepers with the results of those investigations.

Doctors Schlutz, Knott and coworkers (1938) of the Department of Pediatrics at the University of Chicago, studying the comparative value of various carbohydrates (sugar-like substances) in infant feeding, employed honey along with other sugars. Two groups of children were used to determine the effect of various sugars: four children from 7 to 13 years of age, and nine infants ranging in age from 2 to 6 months. The investigators fed the children diluted sugars, then took blood samples and determined the sugar content of blood in 15 minutes after the meal, 30 minutes and 60 minutes; 90 minutes and 120 minutes. When sugars are absorbed from the intestines, they enter the blood stream and are carried to the liver to form glycogen. If carbohydrates are eaten above the limits of the liver to store it as glycogen, the excess is transformed in the tissues to fat and stored as such. Very interesting results were obtained with honey. During the first 15 minutes honey was absorbed the most quickly of all the sugars tested, with the exception of glucose. Honey did not flood the blood stream with an overabundance of sugar. It also maintained both a steady and a slow decrease in blood sugar until the initial level was again reached.

This response of honey is presumably due to the combination of the two easily absorbable sugars, glucose (dextrose) and fructose (levulose). Honey is quickly taken into the body because of its dextrose content, while the levulose, being somewhat more slowly absorbed, is able to maintain the blood sugar. Honey has an advantage over sugars which contain higher levels of glucose, since it does not cause the blood sugar to rise to higher levels than can be easily cared for by the body. The investigators concluded: "With its easy and wide-spread availability, palatibility and digestibility it would seem to be a form of carbohydrate which should have wider use in infant feeding."

Because of these findings, Schlutz and Knott (1938) began to study the possibility of using honey as a sweetening agent in infant feeding. The remark at the beginning of the report on this work is worth mentioning. The authors stated: "Although honey nas been known as a food from the earliest days of which we have historical records, its importance to man seems to have decreased as civilization advanced. In view of the fact that honey is a product. . .ready for use without artificial treatment and that it is composed of two sugars most acceptable to the organism, it is strange that honey has not enjoyed wider use, especially in the feeding of infants and children."

In their experiment the authors studied the influence of the addition of honey to the diet of ten healthy

* Paper No. 474 Miscellaneous Journal Series, Minnesota Agricultural Experiment Station, St. Paul, Minnesota.

infants during the first 6 months of their lives for a total of 151 weeks. The response of infants to honey as a source of sweetening has been contrasted with their response when receiving corn syrup. The general well-being of the infants, number of stools per day, and weight gains have been used to determine the value of honey in regular feedings.

From these studies it was concluded that honey is easily digested, it is well tolerated by infants and does not cause diarrhea. In cases of constipation the increase in the amount of honey in the diet relieved this condition by improving digestion without causing diarrhea. Honey may thus have a distinct advantage in infant feeding over those carbohydrates which have a tendency to be laxative. Honey may facilitate weight gains, since there was a slight tendency for greater average gains per day to occur when honey was included in the formulas.

The authors concluded: "It would seem, therefore, that honey is a type

Honey in commercial food products (125 items)—A collection of candies, breads, cookies, cakes, cereals, fruits, preserves, etc., sold on the market in commercial packing.

of carbohydrate which is well suited to the infant's needs and probably should be recommended for wider use in infant dietaries."

Everybody knows that besides proteins, carbohydrates, fats, and vitamins a baby needs minerals for normal growth; calcium and phosphorus being required in the largest amounts of all of them. It is not enough to supply these minerals in food, it is important that the largest part of them be retained by the body for its own use.

In order to find out how much calcium is retained from the food by the infants, Knott, Shukers, and Schlutz (1941) determined the calcium content of the food given the babies and then they established the amount of this mineral present in the feces and the urine eliminated by the experimental infants during the test period. The difference gave the amount retained by the body.

Containers from foreign lands (Study of foreign advertising): In the order in which they are grouped on the shelves: France, China, Panama, Palestine, Spain, Canada, England, W. Australia, New Zealand, Germany, Greece, Holland, Italy, Tasmania.

First three shelves: various types of honey containers used in U. S. A.; 4th shelf chemical composition of honey; 5th shelf, collection of venom products from England, France, Switzerland, Germany and the United States; bottom shelf, study of the change in coloration of honey; various types of honey non-drip dispensers.

First and last two shelves, continuation of the collection of food products; 2nd and 3rd shelves, honey in commercial products other than food—golfballs, Ukrainian mead, facial creams, soap, vegetable pills, honey cured pipe, cough drops and cough syrups.

A total of 120 such test periods was completed on 14 infants. Various types of milk were used in the diet and the latter was modified as to its vitamin D content. Honey as a source of carbohydrate was compared with corn syrup for different types of milk and for varying levels of vitamin D. The investigators noted that for all the periods studied **the average retention of calcium was always higher if honey had been included in the formula.** These increased retentions when honey was fed occurred both with low and with high intakes of vitamin D and occurred regardless of the type of milk fed or the use of lactic acid. These investigators concluded that in comparison with corn syrup honey would seem to have definite beneficial influence upon the retention of calcium by young infants.

Magnesium is also an essential element in human nutrition. The major portion of the magnesium occurs in the skeleton where it is formed in the proportion of approximately 2 or 2½ parts to 100 parts of calcium. Magnesium is considerably more abundant than calcium in the soft tissues where, among other functions, it is an activator of the phosphatase and glycolytic enzyme system and helps to prevent muscular and nervous irritability.

Doctors Knott, Schlutz, and Shukers (1941) investigated the amount of magnesium utilized by the infants when honey and corn syrup were added to their milk diet. They found that "retentions of magnesium were slightly greater when honey was the source of added carbohydrate than when corn syrup was used for this purpose. With powdered half skim milk furnishing the magnesium, 30 test periods on honey averaged a total retention of 24 milligrams as compared to 10 periods on corn syrup with an average retention of 16 milligrams a day. When evaporated lactic acid milk was fed, thirteen honey periods had a mean retention of 6 milligrams in contrast to a mean retention of - 0.4 milligrams per day for 12 corn syrup periods."

The authors concluded: "Although the data are not conclusive, slightly better retentions were found when honey was the source of carbohy-

(Continued on page 186)

Spring Feeding of Bees

Extension Apiarist, The Ohio State University.
By Dr. W. E. Dunham

The acute shortage of stores in many colonies at this time of year brings "The Spring Feeding Problem" to the front as one of the major problems confronting beekeepers. The unfavorable weather conditions last fall are well remembered by beekeepers, which, as a result in many cases, necessitated the heaviest feeding of colonies in years. Many beekeepers were unable to get sufficient syrup into their colonies because of the prolonged rainy, cold weather. Heavy winter losses are anticipated with especially heavy losses among the small beekeepers, who gave no attention to their colonies last fall.

Thousands of colonies that are on the starvation level now, can yet be saved if beekeepers will check their colonies on the first warm day and supply sugar syrup where needed.

This general acute problem of "shortage of stores" this past fall and present spring periods should be a "warning lesson" to beekeepers to make ample provisions during the coming season so that an abundance of stores will be left on colonies. A food chamber jammed with honey should be left on every colony at the close of the honey flow. "Uncle Sam" has helped us to pull out of this emergency, but should it occur again during the war we may not be so fortunate in having the government make sufficient sugar available to beekeepers.

Sugar Available to Beekeepers

Most beekeepers are familiar with the fact that they may obtain sugar for feeding bees by registering as "industrial users" of sugar at their Local Rationing Board, and make out an application for sugar on Form R-315. Because of the serious shortage of stores during the fall of 1942 due to unfavorable conditions, the government made provisions whereby the lack of stores for colonies could be corrected thereby safeguarding the honeybee population. In cases of extreme emergency the full allotment for 1943 of ten pounds of sugar plus five pounds on the 1944 allotment could be drawn on. However, beekeepers drawing on their '43 and '44 allotments will find that whatever amount they used will be deducted from their quota for these respective years and that to meet any unforeseen shortages of stores in the future they must maintain a reserve of honey to meet such emergencies.

Food Supply Crucial Factor in Colony Build Up

Where the beekeeper harvests his major crop from the clovers the primary goal during the spring period is to build colony strength so that at the beginning of the clover flow all colonies will possess an enormous bee population. The attainment of this goal of enormous colony strength cannot be over-emphasized if the war goals of more honey, beeswax and more bees for the pollination of fruits, vegetables, and seed crops is to be achieved.

Providing adequate food supplies because of the shortage of stores will doubtless be one of the most crucial factors contributing to the proper build-up of colonies this spring period.

Because of the general prevailing problem of stores there will be two critical periods during the spring months that will have to be watched carefully: namely, the period from the time the bees emerge from their winter quarters until the beginning of the dandelion-fruit bloom, and the period two weeks prior to the clover flow. During the period preceding the dandelion-fruit bloom no colony should be allowed to have less than 15 pounds of food in the hive. If the weather is normal during the dandelion-fruit bloom, colonies of standard strength should not only store enough nectar and pollen to meet their needs, but also sufficient surplus to carry the colony over until the clover flow. Many beekeepers do not fully realize during the enormous consumption of stores by strong colonies brooding heavily during the 10-day interval preceding the major honey flow. This is one of the most critical periods during the spring. A few pounds of syrup at this time to colonies low in food will easily make the difference of losses from starvation, or disastrous losses from colonies weakened from lack of food.

Of equal importance during these critical periods is an adequate pollen supply. Insufficient pollen may result from weather injuring the early pol-

len-producing plants, temperatures restricting bee flight, or to a natural scarcity of pollen-bearing plants in an area. Just as the honey, or sugar syrup supplies the carbohydrate needs of the brooding colony, the pollen furnishes the protein necessary to rear young bees. Where beekeepers encounter a pollen shortage they should write to the Bee Culture Laboratory, National Research Center, Beltsville, Maryland, and ask for a copy of bulletin E-531 on the use of a pollen substitute.

Sugar Syrup and Honey for Spring Feed

From the experience of many beekeepers syrup for spring feeding should be made in the proportions of 1 volume of white granulated cane, or beet sugar to 1 volume of water. The correct volume of water should be heated to a high temperature and the sugar poured into the water at such a rate that it will dissolve readily when agitated constantly. No further heating of the solution is necessary. In making the sugar syrup in the proportions mentioned less danger of fermentation is encountered than occurs in thinner syrups. Another advantage is that feeder cans do not rust when thicker syrup is used.

Beekeepers having extracted honey on hand may plan to feed this to colonies if they are absolutely sure it is free of disease. Honey used for feed is usually thinned by adding about 40% of hot water. However, feeding honey entails a disease hazard that should be avoided.

Frames of honey serve as an ideal food as well as correcting a difficiency in quantity of stores. Taking frames of honey from colonies which have abundant stores and exchanging these frames with other colonies is another hazardous practice from the standpoint of disease. A much better and safer plan for having a reserve supply of frames of honey for feed is to select certain colonies in the yard and save the entire surplus crop from these colonies. This should be done only when the apiary has been free of disease for several years, and where the territory surrounding the apiary site has also been free of AFB.

Do not use corn syrup, sorghum, etc., as bees do not have the enzymes necessary to break such sugars down so they can be satisfactorily assimilated.

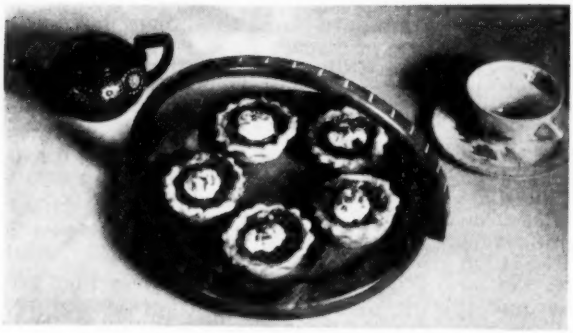
Best Type of Feeder and How to Use It

The two types of feeders that are the most familiar to beekeepers are the ten-pound friction-top pail feeder, and the Boardman feeder. The ten-pound friction-top-pail feeder is accepted universally by beekeepers for many reasons. Doubtless its two greatest advantages are: that it reduces robbing to a minimum, and the syrup is accessible to the bees even during cool weather.

In the friction-top lid of the pail, about 7 or 8 holes should be punched with a No. 2 shingle nail, or of a size similar to that used for nailing hive frames. It is preferable to fill the pail with warm syrup, push the cover firmly in place and invert the pail directly over the hole in the inner cover of the hive housing the colony. An empty hive body is placed on the inner cover and the outer cover replaced, thus preventing the stimulation of robbing. The entrance piece should be reduced to a size which enables the colony to protect itself from robbers bees. When the pail is first inverted, the syrup will run out until a sufficient vacuum is formed to hold the syrup in the pail. This is an ideal condition as it allows the bees to remove the syrup at their own rate and prevents the bees from becoming smeared with the syrup.

Friction-top pail with perforated cover, filled with warm syrup and inverted over frames, or hole in inner cover. Hive cover is placed on empty super

Beekeepers who need ten-pound tin pails for feeding purposes are urged to purchase them now since when the present stock is exhausted such pails will not be available due to government regulations.



Food For Busy Days

By Mrs. Benj. Nielsen

Turn the filling for these toothsome honey scotch banana cream tarts into a pie shell if there's no time to make tart shells.

Brrr! that blustery March wind seems to find one's very bones, doesn't it? To offset its marrow-chilling effect we need plenty of hearty, filling (Grandma would call it stick-to-the-ribs), and nutritious food. And there's so much to be done these days! Time has not been rationed, but it might just as well be! There never is quite enough of it to get around to all the things to be done—the things we must do and the things we should like to do.

To many of us, the planning, preparing, and serving of foods to keep our families physically fit and mentally alert, does not seem to be a very big contribution to our country's war efforts. Not spectacular, to be sure, yet it is very important! Many homemakers have followed the urge to take on outside duties, Red Cross work, defense committees, part or whole time defense work. With growing members in a family, this requires careful planning, and an abundance of energy. For dashing home fifteen minutes before meal time to warm up left-overs very definitely is not "good nutrition" practice. So unless reliable help can be obtained it will require thoughtful planning and ingenuity to execute outside duties and still "do right" by those whose health and well-being are in our keeping.

Frequently I wonder if we honey folks realize and appreciate the tremendously important part our sweet can and does play in these war time days. Did you know that one tablespoon of honey furnishes one hundred calories? That is really concentrated food value! It is a food that requires no change before assimilation; one that furnishes quick energy without tax on digestive organs, leaving no acid, fatigue producing after-effects. No small item during times when work must be turned out at top speed; when anxiety, undue stress, pressure, and fatigue may heavily tax body and body processes. Fortunate are we (whether we realize and appreciate it or not) that we can prepare ahead of time in spare moments tasty desserts, puddings, ginger breads, cookies, etc., and know they will be fresh, full flavored and nutritionally good for us.

Even if you are not engaged in war work outside the home, you will be rushed this month with sewing, housecleaning, getting a multitude of routine "musts" done so you can begin work on that big, all-important Victory garden. So recipes that are quickly and easily prepared and not too hard on the budget have been selected. A superb, easy and quick-to-make cooky, a splendid "keeper" and packed with vitamins and minerals; slow-cooked, flavorful beans you can leave cooking while you are busy or away; a deluxe kind of tarts—it can be pie, if you are too busy to fashion tart shells—actual working time about twenty minutes and festive enough for any occasion; a prepared ahead, won't-hurt-it-a-bit-to-wait salad; tasty desserts. Time savers all!

Honey Bran Spice Cookies

One-fourth cup shortening, ¾ cup honey, 1 egg, 1 cup Kellogg's All-Bran, 1⅓ cups sifted enriched flour, ½ teaspoon salt, 1 teaspoon baking powder, ¼ teaspoon soda, ⅛ teaspoon cloves, 1 teaspoon cinnamon, and 1 cup seedless raisins.

Blend shortening and honey thoroughly. Add egg and beat until creamy. Add All-Bran. Sift flour with salt, baking powder, soda, cloves, and cinnamon; combine with

raisins; add to first mixture and beat well. Drop dough by teaspoonfuls on lightly greased baking sheet about 2½ inches apart. Bake in moderate oven, 350 degrees F., about 20 minutes. Yield: 2 dozen cookies, 3 inches in diameter.

Honey Baked Beans

Three cups dried red kidney beans, 1 clove garlic, minced (optional), about 1 teaspoon salt, 2 small onions, ⅓ to ½ cup honey, 1 teaspoon chili powder, 1 10½ ounce can condensed tomato soup and 4 slices bacon, cut in small pieces.

Wash beans. Cover with water and soak overnight. Drain. Add minced garlic, salt; cover with hot water and simmer, not boil, for 1 hour. Drain, reserving liquor. Place beans and onions in bean pot or casserole. Drizzle with the honey and sprinkle with the chili powder. Cover with the soup and 1 cup of the reserved bean liquor. Arrange bacon pieces on top. Cover. Bake in slow oven, 300 degrees F., 5 to 8 hours, adding more bean liquor if necessary. Delicious!

Honey Scotch Banana Cream Tarts

Two cups milk, 4 tablespoons cornstarch, ¼ teaspoon salt, ⅓ cup brown sugar, ⅓ cup honey, 2 egg yolks, 1 teaspoon vanilla, 2 bananas, and baked pastry or tart shells.

Heat 1¾ cups of the milk in top part of double-boiler. Moisten cornstarch with remaining ¼ cup of milk. Add salt, brown sugar, honey and egg yolk. Beat until blended. Add all at once to hot milk stirring constantly. Continue stirring until mixture thickens; then continue cooking for five to seven minutes. Remove from heat, add vanilla and cool. Pour into baked pie shell, tart shells or thoroughly chilled honey graham cracker crust lined with sliced bananas. Serve with honey sweetened whipped cream.

Jellied Beet Salad

Two cups cooked diced beets, ¼ cup cold water, 1 teaspoon salt, ¼ teaspoon paprika, juice of 1 lemon, ¼ teaspoon pepper, 1 cup diced celery, 2 tablespoons Knox gelatin, 3 cups hot water and beet stock, ¼ cup vinegar, 3 tablespoons honey, and 1 green pepper, shredded.

Add sufficient boiling water to hot beet stock to make 3 cups. Dissolve the gelatin in the cold water and add to hot liquid; bring to boiling point. Add the seasonings, vinegar and lemon juice. Cool until the mixture begins to thicken. Add diced beets, celery, and shredded green pepper. Turn into mold rinsed with cold water. Chill until firm. When ready to serve unmold. Place on crisp lettuce and serve with mayonnaise.

Honey Gingerbread

One-half cup melted shortening, 1 cup honey, 1 beaten egg, 2⅓ cups sifted enriched flour, ½ teaspoon salt, 1 teaspoon baking powder, 1½ teaspoons soda, ½ teaspoon cinnamon, ½ teaspoon cloves, 1 teaspoon ginger, 1 cup sour milk.

Combine melted shortening, honey, and egg. Sift dry ingredients; add alternately with sour milk. Pour batter into well greased pan. Bake in moderate oven, 350 degrees F., for 30 minutes.

Honey Graham Pineapple Scallop

One and ½ cups Nabisco Graham Cracker crumbs, 2 tablespoons softened butter, 2 tablespoons honey, ½ teaspoon grated lemon rind, 1 tablespoon butter, 1½ cups diced pineapple cubes, 2 tablespoons honey, ¼ cup lemon juice, and ½ cup pineapple juice.

Blend cracker crumbs with 2 tablespoons softened butter 2, tablespoons honey and grated lemon rind. Put a layer of this mixture in bottom of buttered baking dish, add one-half of the pineapple, cover with layer of crumbs and dot with bits of butter. Add a second layer of pineapple, crumbs, and butter. Combine honey, lemon juice, and pineapple juice. Pour over ingredients in baking dish. Cover and bake in moderate oven, 375 degrees F., for about 30 minutes. Uncover to brown lightly before removing from oven. Garnish with pineapple rings or serve with honey sweetened whipped cream.

Honey pineapple graham scallop easy to make and festive enough for any occasion.—Photo courtesy National Biscuit Company.

From the Field of Experience

WHAT CAN A BEEKEEPER DO IN MARCH?

By E. D. Wirth

Well, for one thing he can begin to see the results of any mistakes made last fall. He can begin to get that "all gone" feeling that comes from seeing weak colonies that were strong in October, and dead colonies where weak ones stood last fall.

If by chance your bees winter 100%— and by that I mean all strong on June 1st—you are to be congratulated. But before you puff out your chest too much, make sure that it really was good management and not just plain dumb luck.

You know, the line of division between luck and good management is not as sharply defined as some of the old business leaders would have us believe. A lot of good management is the result of good luck, but in many cases bad luck is the result of bad management. Generally it is the fellow with the broken-down fences; the fellow who leaves his equipment out in the weather, who has the bad luck. But the neatest farm in the world does not mean that the farmer is efficient. He might be spending all of his time cleaning up.

Results—year in and year out—results are the only things that count.

Brooklyn, New York.

• • •

APPLE SYRUP, ANOTHER COMPETITOR

By Penn G. Snyder

Scientists of the United States Department of Agriculture have given the country another honey substitute in the so-called apple syrup. The compound has a heavy content of levulose sugar which makes it very sweet.

In time, when the method of refining is perfected so as to retain the aromatic flavor which is very volatile we may have a full sized competitor. It is probable that millions of bushels of off-grade apples will find a ready sale for the production of this new syrup which is light amber in color.

For the duration of the war it probably will not affect the honey markets, as practically the entire output at present will be used by the tobacco companies in processing and curing. In processing tobacco, both honey and glycerine are used in large amounts. With the war demands on glycerine it is about unobtainable by the tobacco companies. When the new syrup was tried out by them and found usable they purchased it in large quantities.

Plans are being made to produce small processing outfits so the syrup may be put up by the apple grower individually who has a fair-sized acreage of orchards. This should lower production costs and also give the grower the full profit.

As this syrup is not a synthetic product there will be a limit to its production which is the only favorable outlook from the beekeepers' viewpoint.

Trotwood, Ohio.

• • •

MORE ABOUT CALORIC VALUE OF HONEY

By Mrs. Ed. Trimble

Mr. Ward's experience with questions about honey's caloric value or fattening properties, as related in the January, 1943, Gleanings is no doubt shared by many. We have noticed from time to time mention of the chemical content of honey with tables and big words. But we also notice in the January 1943 issue on "Questions and Answers" page a query on the caloric value of honey, and note that no figures are given, and no mention of sugar in the comparison.

In our own honey sales we have often been asked similar questions. Now, to a lot of us, calories are just something that exceedingly fussy women worry about as a sort of hobby, and are taken quite seriously by some. Occasionally there is an exceedingly thin or overweight person who must count his calories. But to most of us calories aren't very important, especially in our weaker moments, i.e.: every time we have a good meal set before us. However, to present such an attitude to a customer, who seriously asks us, "What is the caloric value of honey?", would get us nowhere fast. We would at least lose one, if not many friends for honey. Beekeepers, at least, should be ready with an answer about the food value and caloric content of his product.

Mr. Ward says he looked it up, but I wished he had told the rest of us where he found this information or even made it very easy and told us some of the facts he discovered. Seems to us it would not be a bad idea for some of this data to be included in recipe books. Not generalities, but actual figures and comparisons with known quantities of other foods.

The answer we give to this question suggests ignorance and is certainly vague enough, but to date we haven't lost a sale. The lady in question may not eat freely of honey, we don't know, but the best answer we are able to give is, "We have not seen any figures on the number of calories in honey, but tests and articles about them have shown us that honey is better for a reducing diet, due to being readily assimilated."

The most important and persistent question put to us on all sides by our customers these days has nothing to do with calories or vitamin content or food value, but, DO YOU HAVE ANY HONEY? and they are not satisfied with the answer.

Warroad, Minn.

[In the table from which comparison of honey with some other sweets was taken, referred to on top of page 48 of January, 1943, Gleanings we find that one tablespoonful of honey is equal in caloric value to two tablespoonfuls of white granulated or brown sugar.—Ed.]

• • •

THE BEE JOURNALS: HOW I DO ENJOY THEM!

By A. J. Bissinger

Joy! It's a great word. How that emotion does carry one along day after day, and makes life as well as beekeeping worth while! Joy is healthful, so the scientists tell us.

But where does joy come from? I discover that joy accompanies words that convey truth and good news. Thus in beekeeping it would have to come from bee conventions and bee journals. But conventions come so seldom, while bee journals are, can be, or ought to be, with us always. I find they bring both information and inspiration; they bring something that stirs my interest in the beloved avocation as a side line at present, and maybe as a full-time occupation later.

Truly, words are or can be, carriers of something that give additional courage, even joy, which keeps one going right on. See what you are missing if you don't take a journal; or, if you take one but don't read and enjoy it! It's the reader's attitude that makes the difference. Be open minded! Look for light and help! Look deeply and continuously, and you will be surprised. Seek diligently, and you will find. Keep at it until seeking and open-mindedness become a habit and a delight.

Often the wrapper of the journal is torn off before I get out of the postoffice. As I poke along the street, I glance over the table of contents to see if there is anything on swarming, wintering, especially top entrances, honey plants, pollen substitutes, entrance diagnosis. Why these topics? Because they grip my interest most. After supper I use a red lead pencil to mark those lines and paragraphs that state or suggest, even hint, the information I need. It is **need** and **interest** that guide my reading and markings.

I stack my journals in a handy place, and when waiting a few minutes for meals, I open up a back number and look for my former marks which I usually re-read on the spot. This refreshes what I had forgotten. And how one's memories do fade in a world where there are so many things to remember! Articles that seemed unimportant last year, look important this year. And what I marked last year seems even more important upon a second or third reading.

Do I believe all I read! No; neither do you. What I doubt gets a question mark. But I appreciate the courage of the one who writes accurately what he has discovered and seems to believe what he advocates. Aren't we all searchers for the truth? And it's the truth that frees us from uncertainty and brings joy to our work. Thus, if you don't enjoy beekeeping, it may be you don't have enough truth about it. It's the purpose of the journals to help you get as much truth as can be found.

Somehow what the researchers and long-time producers have to write seems to me to be most dependable. Don't you have a feeling of half-pride when the findings of these researchers confirm what you have come to believe and practice? This is doubtless true with us as beginners. A pleasant feeling of certainty or semi-certainty comes to me when reading the careful try-outs and conclusions of such persons as Hambleton and Harriett Grace, Pellett and Paddock, Dadant and Deyell, Root, Rea, and Rahmlow. A novice

XUM

ought to be happy with such guides. Has this earth any better ones?

And why not enjoy your journal, as I do, in the following fashion? Keep a back number in your car handy. And when waiting on your wife or other passengers who are shopping for an hour or more, get out your pencil, read slowly, even critically, and mark and evaluate everything, at least all you can. It's fun! You grow to feel safer and happier. Just to feel more sure than before puts something into you that you need as you contemplate your beekeeping future. It's a joy to read the journals. I read two and wish I had another.

Prescott, Iowa.

• • •

BEESWAX OVER 50 YEARS OLD

By Ed. T. Coumans

Several years ago, cleaning up an old house, we came across a few odd shaped looking bricks. They seemed large and quite light in weight. After washing them, I found they were bricks of beeswax, each one stamped with the words, "One pound pure beeswax". The father of the owner of the house had kept a store in the late '90's and the wax was part of his stock. The wax seemed quite hard but warming it slightly I was able to cut some thin pieces off. The wax still has a strong rich aroma.

Bay City, Michigan.

[Beeswax is really a fatty acid composed mainly of cerotic acid with smaller amounts of palmitic acid. It is about the only fatty acid that does not oxidize, or rather, it is a substance the oxidation of which is so slow as to be negligible. According to reports pieces of beeswax were taken from some of the Egyptian tombs, still pliable, still having an aroma when cut or broken. Beeswax having washed ashore from some wreck and long buried on ocean beaches has been reclaimed, still good and still none the worse for wear.—Ed.]

• • •

THE GOLDEN GLORY WILLOW

By Percy H. Wright

There are two late flowering willow species in this part of the world, both of interest to beekeepers. One is **salix Bebbiana,** or Bebb's willow, which is an important source of nectar and pollen in all parts of our province where any willows occur. Some plants of it seem to hold off their bloom and their leafing until late May, early and mid-June, remaining dormant, while other willows are even shedding their seed. I find it very strange that a plant fully hardy should deliberately, as it were, shorten a season that is very short already. The way they awaken to the warmth a few at a time, scattering the floral tribute to the bees over a long period, is hard to explain.

The other late flowering willow is **salix serissima,** the name being Latin for "very late." Unlike any other willow with which I am acquainted, it leaves out before flowering, and the shiny golden-greenish leaves mingle with the very large light-golden pussies. The effect is so beautiful that I believe this species will be a most desirable ornamental wherever there is enough moisture for it to thrive in a super-healthy state. How far south it, and Bebb's willow too, will flourish, is something yet to be seen. It is well understood that southern items moved northward do not do well, but it is not so frequently understood that there are also limits to the distance that northern forms can be moved south. Evidently a northern adaptation is something very real in the plant world. **Salix serissima** would probably thrive in the northern tier of states.

Both these willows are evidently abundant producers of pollen and nectar, at least, they hum with bees all day long, and the income of honey seems to indicate that they are reliable and heavy producers. Where windbreak is needed, there is no reason why they cannot be used, and the more beautiful of the two will also probably find a place in the house grounds of both farms and cities. I am proposing the name Golden Glory willow in order to give it a start in the appreciation it deserves.

Moose Range, Sask.

• • •

SECOND GLANCES

By C. M. Isaacson

We are all too well aware of our own problems, and for that very reason it does us good to read of the other person's. But Mr. Pettit does more than list problems (page 65); his article will help considerably towards a better understanding between shipper and buyer—and gives several items that should be of assistance in actual practice. The method for storing extra queens works well as I have seen in several apiaries. Many prefer to have the "nurse colony" queenless, however, thinking that it makes for better care of the extra queens. The method given

for introducing package queens is also good; get the bees sticky (not drowned) and dump in the prepared hive, then open the queen cage and dump her in with them. It is simple —and the best method I have tried so far.

Royal jelly should be a fascinating substance for a trained investigator, what with its ability to produce such astonishing growth and development. The report by G. F. Townsend is phrased in language we all can be interested in (page 68). That the physiological activity of the "fat fraction" may be limited to insects sounds reasonable—might it not be because an insect eats so much more proportionately, and hence does not need any large amount of this factor in any given weight; is able to assimilate a sufficient amount anyway due to the large amounts of food passing through? That may be a vague idea but it appears possible to me.

By keeping two things in mind, we Northern apiarists could help the Southern shipper very considerably in his efforts to give better service all around. First, estimate your needs and order in advance. Second, remember the shipper is not superhuman and can't control the weather; give him a few days leeway in regard to exact shipping date. Mr. Fortune's mention of the resolve "never to do it again"—followed by the same schedule next year (page 71)—strikes a responsive note. I know a bit about turkey raising (if it is permissible to bring in a "foreign" subject), and how many times the same words are spoken here as well—with the same results following!

Suwannee! Okefenokee! Why there rings melody in the very names! Mr. Huey's article (page 72) is of real interest, both pictures and text—we would all appreciate some of those "surprise" honey flows. Honeybees and the picturesque environment—the two should certainly be a creative combination for some gifted swamp poet.

"The Drone in Relation to Bee Breeding" (page 74). Mr. Bessonet gives us a very well written article but if it proves true that the drone is not always a product of parthenogenesis (a suspicion held by several investigators and queen breeders), many of the conclusions may need revision. The constant selection method for improvement advocated in the article may well be the only really practical method, even if it is a slow process.

Apples and honey (page 76). That is a nice sounding (and eating) combination. The recipe for baked apples with raisins and honey, is **good** —I know from personal "test experience".

If the present real need for beeswax continues (as it very likely will) the plans given in H. H. Root's report should be used in one form or another (page 78). They seem to offer extra wax with little or no loss of honey.

To the story by John H. Price (page 80) there is only one possible exclamation, "Habet"! Honey (and John, Jr.) certainly emerged the victor.

Mr. Hogarth emphasizes a very important factor in the wintering problem, and hardy strain of bees (page 81). This certainly must be a decisive element—one that we probably have given too little attention. I think we have all seen the different types of wintering such as he mentions, but have done too little about them.

S. H. Burton is a beekeeper in the real sense of the word. His interest in the welfare of the bees proves that (page 82). But at times some of those wax and propolis "step-ladders" must be removed, when they grow high enough to be attached to the frames.

February can be a month for odd jobs if one has idle hours on hand (page 83). I am glad, though, that the caution against handling combs carelessly is included. In an unheated honey house the work had better be left for a warmer time.

The article on page 100 is well worth re-reading and studying. The information it contains should be given constant publicity to convince the public of the real importance of apiculture. As regards relative values at present, the order seems to be pollination, wax, **and** honey— rather strange for us who have been spending the bulk of our efforts towards producing the honey crop, to become used to.

Let's "look ahead" through the American Honey Institute. There is still one unrationed rubber product —the "rubber dollars" that the Institute stretches so far in advertising the industry. "Even a dollar will help".

Middle River, Minnesota.

War-time Beekeeping Conference

Held in Chicago, January 24 to 27, 1943.

Due to the impossibility of the Gleanings editorial staff being represented at all the sessions of this Conference we are indebted to a number of people who did attend, for most of the following report. Prof. V. G. Milum of Urbana, Illinois, was selected Conference Secretary and he was good enough to send us a copy of his report from which the following is taken:

In response to a call issued by Mr. James Gwin, Madison, Wisconsin, and as announced in the January issue of the bee journals, representatives of honey producers and allied industries assembled in Chicago on the above dates. Two committees appointed by Mr. Gwin, namely (a) The Honey Industry Cooperation for Our War Efforts and (b) Organization Improvement, met in joint session at 1:30 P. M., January 24. With Mr. W. E. Anderson as Chairman, the members present were asked to express their opinions as to the present needs of the industry, particularly in showing U. S. officials what the industry can do to win the war and the type of organization necessary to do the job.

During this discussion, it was pointed out that the industry as a whole needs to watch the supply of equipment and should not depend upon the supply people alone since they might be accused of personal and selfish interests. In regard to deferment of beekeepers by draft boards, it was indicated that they be better informed of the beekeepers' importance and the fact that 25 colonies are equal to 1 unit of the 8 to 16 units required for draft deferment in agriculture. On this basis, 200 to 400 colonies may be accepted by draft boards but the actual decision is at the discretion of the individual boards.

Beekeepers should watch the sugar situation carefully since it might not be available for feeding bees even though at present 10 pounds per colony for 1943 can be obtained and 5 pounds of the 10 pounds for the 1944 allotment may be borrowed.

Mr. Harold J. Clay stressed the problems of Mr. Jas. I. Hambleton as a member of a department where most efforts are to destroy insects rather than to propogate them pointing out that Mr. Hambleton was often asked to serve as a referee on legislative and regulatory matters pertaining to beekeeping and only on invitation from other departments.

Mr. Hambleton stated that his office has stressed benefits of pollination by bees to agriculture in general and promised full cooperation to the industry in all of its phases. A significant statement by Mr. Hambleton—"Sufficient pollination is only possible through the production and sale of honey. We will need maximum seed production for 10 years following the war."

Mr. Chas. A. Reese: "Do seedsmen know bees are needed? We must establish importance of beekeeping in the war scheme and our contribution to the effort."

Mr. Alan Root: Cited the supply men's difficulties arising in Washington from constant changes in office personnel. "Beekeepers should do the asking also."

Mr. Walter Diehnelt: "Get state organizations into the national organizations: make it more representative."

Mr. A. G. Gill: "Can we do more to educate the people in general on the value of bees?"

Mr. H. J. Rahmlow: "Most important thing is organization."

Dr. C. L. Farrar: "We need an energetic program to engage interest of a large portion of the 600,000 beekeepers."

Dr. E. F. Phillips: Reviewed steps leading to adoption of allocation orders. Need stronger order than 118 to bring honey back to its proper location to save industry after the war. Changes in the industry needed are:

(1) Greater emphasis should be placed on the methods of honey production particularly as to methods of saving labor. Those who do, will survive.

(2) With present demand for honey, now is time to improve status of honey packing. Prevent damage to honey between hive and consumer. Make our product so good it will demand the price now being received. (We are not entitled to help unless we put our own house in order.)

Classification of beekeepers—which group shall we work for—their interests differ—the future rests with the commercial beekeeper—not the beginner—we cannot support all the beekeepers—we must decide which group we shall support.

Dr. E. J. Dyce: "My experience is varied and I see the problem from various interests." Need representation of various groups by delegates to get backing of industry as a whole. Cited experiences of Canadian Council of Beekeeping in securing action on recommendations of representatives of industry.

Mr. W. E. Anderson: The consensus of opinion seems to be that we organize our industry and then choose someone to represent the industry. If that person represents the entire industry he will receive

an "ear" in Washington. Must be versatile enough to mix with beekeepers, talk their language, and talk his way through all branches of the industry to the agencies in Washington. A good man and a good salary will convince beekeepers they should lend their support. Any organization needs a definite objective.

Suggests committee of 8—two from each of four regions of U. S. to select a man and tell him to go to work.

Considerable discussion on representation of a national council followed after which Mr. Gwin instructed the Committee on Organization Improvement to start its deliberations. This committee consisted of Rahmlow, Anderson, Root, Milum, Dyce, and Remer. Meeting at 5:15, P. M., Jan. 24, with H. J. Rahmlow, Chairman, the committee adopted the following motions: (1) It is the unanimous opinion of the committee that an organization for the industry be formed that can and will take steps to employ a permanent secretary to represent all branches of the industry. (2) It is agreed that the organization include (a) honey producers as represented by a national organization of beekeepers, (b) the package and queen breeders as represented by the Southern Beekeepers' Conference (later included in the National Federation of State Beekeepers' Association as Region or Area 5), (c) manufacturers and dealers as represented by the Bee Industries Association, and (d) the honey packers as represented by the National Honey Association.

The name proposed was Beekeeping War Council to be composed of two members from the groups listed. This committee adjourned at 7 P. M., January 24.

All committees were again convened at 9:40 A. M., January 25, 1943, at which time the report of the Organization Committee was read. There followed considerable discussion of the amount of representation and the funds that should be raised by each division of the Council.

Mr. E. B. Everitt of Pennsylvania moved that this group take steps to form a stable organization of the whole industry. Seconded by Mr. Oscar Schmidt of Michigan.

Committee on Organization convened at 1:30 P. M. with Mr. H. J. Rahmlow of Madison, Wis., as Chairman when the proposed form of the National Federation of State Beekeepers' Associations was formulated. (Mr. Rahmlow's report appears on page 150.)

On January 26 the general conference was called to order at 9:45 A. M. by Chairman James Gwin.

Reading of proposed constitutions for (a) War-time Beekeeping Council (b) National Council of State Beekeepers' Association.

Some discussion followed as to the need of the two organizations suggested by the constitution which was creditably presented by Mr. E. B. Everitt.

Upon motion of Mr. Lewis M. White of Portland, Oregon, the proposed constitution of the National Federation of State Beekeepers' Associations subject to necessary changes that may need to be made, was unanimously adopted by rising vote. Meeting adjourned at 11:50 A. M.

Meeting again called to order by Chairman Gwin at 1:45 P. M., January 26. Discussions followed by C. L. Farrar, J. I. Hambleton, and M. C. Tanquary. Meeting adjourned at 3:15 P. M. with instruction that the Price Committee would report at 5 P. M. when meeting was called to order by Chairman Gwin.

Motion made by Mr. White, seconded by Dr. Phillips, that the districts as recommended be adopted for the regions under the proposed National Federation of State Beekeepers' Associations. Unanimously adopted.

Then followed the report of the Committee on Prices by the Chairman, Mr. A. E. Meineke of Arlington Heights, Illinois.

The first resolution offered was one to the Secretary of Agriculture:

"In order to give adequate stimulation to increased honey production and thus to provide for abundant pollination of essential seed and fruit crops, and

"In order to give essential stability to the keeping of bees in the years following the war emergency, and

"In order to stimulate the production of beeswax, which is being used increasingly in war industries, the National Federation of State Beekeepers' Associations, The Bee Industries Association, and The National Honey Association in conference assembled at Chicago, Illinois, January 26-27, 1943, do respectfully request

"That the Secretary of Agriculture set a goal for honey production in 1943 at 275 million pounds, and that the Department of Agriculture make every effort to contact the war Production Board to make available the necessary containers and equipment for production of same, and

"That the Secretary of Agriculture set a goal for beeswax of 5 million pounds, and

"That price floors be established for honey and beeswax in order to give stability to the honey producing industry." Unanimously adopted.

At the evening meeting called to order 7:15 P. M., January 26, the following speakers were heard: Mr. Ainsworth of the Office of Price Administration; Mr. L. W. Parks, Chairman of American Honey Institute who in turn introduced its efficient and qualified Director, Mrs. Harriett M. Grace, who explained the vast publicity program now in operation and read a

XUM

paper by Dr. Elvjhem on his recent work on the vitamins in honey.

After the evening speaking program, all persons in attendance from the five regional areas of the proposed Federation of State Beekeepers' Association were instructed to caucus themselves to select their temporary representation on the proposed Beekeeping War Council. (Mr. Everitt's report on the Beekeeping War Council appears on page 151.)

This committee was instructed by Mr. Gwin, Conference Chairman and Acting Chairman of the Federation, to meet and select a delegate to represent the industry at the hearing in Washington on honey price ceilings on February 3.

Meeting of January 27 called to order at 10:00 A. M. by Chairman Gwin.

Following reading of a temporary constitution of the proposed Beekeeping War Council, there was discussion after which it was moved by Mr. Rahmlow, duly seconded, that the proposed constitution for the Beekeeping War Council be accepted as read.

The report of the committee of Regional Representatives of the National Federation of State Beekeepers Association on a delegate to be sent to Washington to represent the honey producers was that Mr. White of Washington be selected as delegate with Mr. A. E. Meineke, Arlington Heights, Illinois, as alternate. On motion, the recommendation was unanimous.

The following are some of the resolutions adopted:

That since beekeepers find established dealers in honey are aware that the present condition of the honey market is in considerable degree due to the promulgation and enforcement of the War Production Board Order M-118, they desire that the order be retained and enforced. In the event that questions should arise regarding later amendments, it is requested that advance notice be given members of the honey industry.

A Resolution to the Secretary of Agriculture that the Bee Culture Laboratory of the Bureau of Entomology and Plant Quarantine, be designated as a single office where requests from beekeepers be sent and information be disseminated promptly on all rules and regulations concerning the beekeeping industry.

A Resolution to the Secretary of Agriculture that "The Honey Market News Reports" be retained because of their value to beekeepers and as an avenue of rapid dissemination of important information and that the responsibility for the reports be designated to Mr. Harold J. Clay and to allocate to him also the responsibility for the study and application of problems concerned with the marketing of honey.

That the producer representative of the Beekeeping War Council was instructed to call to the attention of W. P. B. the necessity of allowing the honey producers of the country to purchase five gallon cans based on their 1943 needs instead of their 1942 purchase, the request being based on the fact that in many heavy producing areas the 1942 crop was in many cases 75% below normal.

The final resolution, unanimously adopted by the conference, was to the Conference Chairman, Mr. James Gwin, expressing its appreciation for his courage and foresight in calling the conference. This in itself indicated the general opinion as to the success of the conference.

The formation and objectives of the **Federation of State Beekeepers' Associations,** an organization to represent honey producers, is now ably presented by H. J. Rahmlow, Madison, Wisconsin, who was Chairman of the Committee on Organization:

FEDERATION OF STATE BEEKEEPERS' ASSOCIATION PROPOSED

The committee on organization meeting at the Beekeepers' Conference in Chicago, January 26-27, called by Mr. James Gwin, President of the American Honey Producers' League, planned the frame - work of an organization of producers to be known as **The National Federation of State Beekeepers' Associations.**

Reasons for Organization

Briefly, here are some of the reasons for taking this step:

(1) The beekeepers do not now have an effective organization to unite them nationally in any large numbers.

(2) It would be impossible for any type of national organization to enroll any large number of members if they appealed to the beekeepers of the United States on an individual basis, with annual, individual membership dues.

(3) A large number of states now have state associations and many of them have large memberships. It will therefore be relatively simple to unite these state associations into a Federation. This will immediately give the Federation powerful representation throughout the country. The expense of the organization would be at minimum, consequently dues need not be high.

How the Federation Will Be Managed

A frame-work constitution was drawn up by the Committee and accepted by the Conference. It provides for the following setup:

(1) The affairs of the Federation will be in the hands of a Board of Managers to consist of one delegate from each state association. This Board will be the policy-making body, and will meet once each year at a convention of the Federation. They will elect the officers, consisting of the president, vice-president, and secretary-treasurer.

(2) A Board of Directors will have direct charge of the affairs throughout the year, while the Board of Managers is not in session. It will consist of the elected officers and two representatives from **each of five regions in the United States,** consisting of the Atlantic States, the Middle-western States, the Southern Beekeepers, the Mountain and Plains States, and the Pacific Coast States.

It is planned that each region will organize, hold regional conferences, elect their own officers, and of course elect a member on the Board of Directors.

Dues

It was voted that the dues be paid by each State Beekeepers' Association, and will be **5c for each member of such State Association,** with a minimum fee of $5.00. While this amount will not bring in very much money, it should nevertheless, serve to get the organization started, and can be increased when the services rendered seem to warrant it.

What Each State Association Should Do

Each state beekeepers' association should immediately consider the plan and vote whether or not to join. Each association in voting to join, should elect a delegate to act on the Board of Managers. No money should be sent in at this time because we do not yet have a secretary-treasurer.

As soon as enough states have voted to join to make it seem feasible, a meeting of the Board of Managers will be called by the Committee on Organization. They will then proceed to elect the officers and the new secretary-treasurer will then request each state for the dues.

Just as soon as possible the state associations in each region should have a meeting in any way they may decide is most expedient and best, and elect a member to act on the Board of Directors from that region.

All of this information can be sent to the chairman of the committee on organization, Mr. H. J. Rahmlow, 424 University Farm Place, Madison, Wisconsin, or to any member of the Committee on Organization, which consists of: Prof. V. G. Milum, Department of Entomology, Urbana, Illinois; Dr. Russell Kelty, Michigan State College, East Lansing, Michigan; Mr. James E. Starkey, 404 State Library Bldg., Indianapolis, Indiana; and Dr. W. E. Anderson, State House, Baton Rouge, Louisiana. — H. J. Rahmlow, Madison, Wisconsin.

To get a clear picture of how the objectives of the three organizations representing different sectors of our industry are correlated we now have a report from E. B. Everitt who is Acting Secretary of the **Beekeeping War Council** which was formed as a sort of over-all organization to meet the needs of the present situation:

THE BEEKEEPING WAR COUNCIL

The **Beekeeping War Council** formed at the recent Chicago meeting is a small organization which will try to correlate the three bee industry groups—the **National Honey Association** (Packers, etc.), the **Bee Industries' Association** (supply manufacturers), and the new **Federation of State Beekeepers' Associations** being set up by the producers.

Although the **Council** is now primarily concerned with the problems arising from the war, it is intended to be a permanent organ whose name will probably be changed to the **American Beekeeping Council.** Its constitution specifies a governing Board of nine men delegated by the three member associations and—eventually—a paid secretary chosen from outside this committee, whose office will become a clearing house of information for the whole industry on such matters as laws, prices, grading, trade practices, tariffs, credits, research, etc.

This **Council** is the logical and emphatic expression by the beekeeping industry of a will to put its house in order, to work together continuously for stabilization and improvement. Evidence of its determination to bring about unified action is the constitutional provision that all ac-

(Continued on page 181)

From North, East, West and South

NORTHERN CALIFORNIA, Feb. 5

Weather: Our weather is ideal—not too wet nor too dry; not too cold nor too warm. From some parts of our territory come complaints that the shortage of rain will affect the honey crop of 1943, making it short. Other parts report plenty of rain to date and finishing with, "Give us plenty of rain toward the end of the season and we are assured of a good crop of honey in 1943". Here in the Bay district, where we seldom have frosts, our bees are building up rapidly in January and are already showing a surplus of honey. None of us will be able to say what the honey crop of 1943 will be, until the season is over and the honey is in the can.

Last month when we commenced to write our article for February, we thought, "This is the resting time for most beekeepers, so we will take this time to tell them how we produce a honey crop from eucalyptus in January and February." Our first article had no more than reached the publishers than a change in the weather made us know that we could not write a worthwhile article on such an important subject in so short a space of time. So we decided to leave our bees at the end of a three weeks' cold and wet spell, Feb. 5, and let them make up in the future what they had lost by our heavy rains. These rains caused floods and other losses in all parts of the state, but made many happy beekeepers in many parts of the state, who will have a brighter outlook in February than they had in January for the crop of 1943.

Honey: The demand for honey continues. We are having urgent requests for honey, or information as to the time when it can be furnished to dealers in the East.

Beekeepers Awake to the Demand: Our beekeepers are awake to the demand and are spending a busy off-season preparing for the crop of 1943. As a rule, beekeepers are slow to prepare for the future by having a good supply of hives on hand. This year they have been told there may be a shortage. They know of the demand for wax, and of the importance of their bees in pollinizing their neighbor's crops. They are awake to their duties in helping to end this cruel war, and we can depend on them to do their part.—Cary W. Hartman, Oakland, Calif.

• • •

SOUTHERN CALIFORNIA, Feb. 2

Weather: Warm balmy days, green grass growing everywhere, shrubs and flowers starting new growth and all nature seems glad. Days are getting longer and nights shorter, only two or three nights cold enough to make lighting the smudge pots necessary as a protection for oranges and lemons. Poinsettias, one of our tenderest plants, in a riot of deep red, are growing on the south side of our house. There is nothing the matter with the weather.

Market: Honey at 12 cents and beeswax at 41½ cents finds a ready buyer for the beekeeper who is fortunate enough to have any to sell.

Miscellaneous: Just about the time when your correspondent was beginning to think there would be complaints again because of a dry prospect, then with a bang, everything changed. Thursday January 21, it sprinkled a little, Friday it poured day and night and Saturday it rained some more and when it was over we had more than ten inches for the storm.

The fellow who lived in a house where the water did not get in some place was very fortunate. But the benefits so out-number the damage that we can all be most thankful. We have a goodly number of men following our vocation who still hold to the notion, that we must have early rains to get a honey crop in Southern California. This may prove to be a season to test the worth of their belief. We will stick to our opinion, plenty of rain will give us some honey, weather conditions being favorable, no matter how late in the season it comes.

The principal thing now is to bend all efforts to see that every colony possible is in good shape to take full advantage of any honey flow that may be available. Fortunately sugar is to be had when needed for feeding bees and from reports there are many colonies that will need it.

On January 27, while sitting in our automobile leisurely looking across the landscape we discovered bees entering a pepper tree about five feet from the ground. We approached and found a busy bunch of workers, many of them laden with pollen, going in and out of a very small opening where only a single bee could pass. Sometimes a dozen bees with pollen on their legs would be waiting their turn to get in. To us it looked as though the slightest growth of the tree would close the opening. In fact, we noticed several bees using every effort to enlarge the entrance by tugging at the hard dry wood surrounding the opening. So just as an act of kindness we decided to relieve the situation. With our jack knife we proceeded to enlarge the opening by digging out a little of the dry wood. While we succeeded, we were also rewarded by several vicious stings. Moral: Do a good turn when you can but always be prepared for a reaction in case your good intentions are misunderstood.

Several boys who had managed to get together a small apiary of 20, 30, and as many as 80 colonies have been called into the service. We like the spirit of the boys as few of them want to sell but are making arrangements for their care while away so that they will have their bees when they come back.—L. L. Andrews, Corona, Calif.

• • •

MONTANA, January 29

Weather: Late fall and early winter have supplied us with rainfall and snow in abundant measure. Two feet of snow fell in the last ten days and severe cold followed, but the weather has now moderated considerably and a chinook can be expected. For the past three months we have experienced almost continual cloudy stormy weather.

Condition of Bees: We finished packing our bees in a snow storm and later than planned because of unusual weather. Bees went into the winter much heavier in stores than last year. They had a partial flight on Jan. 27, and indications are they need a cleansing flight.

Miscellaneous: We are having our usual winter plague from woodpeckers in the yards near the mountains. They peck out the hand holds of hives to get at the honey and often ruin frames and cut holes in the combs. Last year in yards not packed the damage was considerable because the hammering kept the bees stirred up. In some instances they pecked out all hand holds on a two-story hive. This year they have pecked only through the packing in yards examined. We like to make our packs as air-tight as possible and this interference is annoying. During warmer days the bees drive them off. Even the woodpeckers have found that honey is best on coldest days. No doubt they got their first taste of honey from bee trees of which we have an over-supply.

Farmers near two yards notified us that bruin was a visitor in the immediate locality and frequently; but we were spared damage from them for this season as they are in hibernation before now.

We know several bee men who are changing their outfit from ten-frame to eight-frame equipment. They make the claim they get more honey on the average from the smaller hives and cut down considerably on heavy lifting. Many of the eight-frame size men operate with but one brood chamber with success. We have stayed with the ten-frame equipment and dual brood chamber, but sometimes wonder if just as good results are not obtained with less work and with possibly better results.—T. J. Rowe, Arlee, Montana.

• • •

TEXAS, February 1

Weather: The month of January for much of Texas was ideal. Cold weather existed everywhere, but no extremes. For a considerable portion of the month the temperatures were sufficiently low to cause the bees to cluster. They were not sufficiently low to harm the plants or to be harmful to the clustered bees. The result is that the amount of stores consumed during this month was extremely small, being less than one-half of the stores consumed during January, 1942. Cool and somewhat damp weather has existed throughout the State. As a result many of the win-

XUM

ter annuals which gave the early flows are in wonderful condition. Also it is sufficiently late in the year that no heavy freezes are to be expected.

Conditions: Shrubs and honey producing trees are in good condition. This all means that the beekeepers should start at once preparing all fixtures, making all plans to pick up every ounce of honey which the bees can produce. The beekeepers who anticipated their needs last fall have the satisfaction of knowing the bees are ready for an early honey flow when it comes. Those who depended on last minute preparations are liable to be disappointed with supplies and labor.

Market: While there is still time, beekeepers, especially those who live far from markets, should investigate the possibilities of sale. It is very probable that a majority of honey leaving the hands of beekeepers in small amounts will have to be packed in glass. It is also probable that there will be an abundant market for honey at the extractor and the buyers taking it in quantity, thereby saving the beekeepers the expense of handling and transportation. The beekeeper should know ahead of time what he expects to do and although his bulk price may seem low, if the facts are known, the low price may bring the beekeeper the most money. —H. B. Parks, San Antonio, Texas.

• • •

KANSAS, Feb. 6

Weather: The rainy, cool weather during the first week of September cut off the honeyflow from smartweed in many sections of the state. This honey flow had been in progress for two weeks and was providing a considerable amount of honey and building up colonies to good strength in preparation for winter. During the third week of September there occurred an early killing frost. Through the months of October and November there was ideal fall weather. December was colder than usual and prevented flights, except on one or two occasions. The total rainfall for the year exceeded the normal by more than ten inches. January weather was not below normal, and there was only one cold wave, which lasted four days. On January 19, at Manhattan, the thermometer registered -21° F. In all parts of the state there were subzero temperatures at that time. The moisture conditions for January were below normal, which made little difference, since there was a surplus of moisture present in the soil. On February 2, Manhattan was in the center of the heavy rainfall area, at which time 1.11 inches of rain fell, which is nearly the normal rainfall for the month.

Condition of Bees: Where colonies of bees were adjusted for winter conditions early in the fall, particularly in some instances in northeast Kansas, they were low on stores during December. In some cases this condition has been corrected by feeding. Colonies that were adjusted later in the fall apparently are coming through the winter in good condition. Flights have been possible in the central area of the state nearly every two weeks. The temperature in northeastern Kansas has been much lower than that in the central area, and probably bee flights have not been as frequent as in the central and southern part of the state.

Plant Conditions: The soil moisture situation is over-abundant. Farmers in the eastern half of the state are complaining about too much moisture in the soil. Seepage and non-drainage of water on farm land has prevented certain kinds of farm work. The plants are in excellent condition and, in the central section, the white clover plants have remained green all winter, due to the fact that when cold periods occurred, the ground was covered with snow.

Prospects: Since there is an abundance of soil moisture and plants are in good to excellent condition, prospects for crop production in June and July appear to be good at this time. There has been some increase in flax and soybean acreage which, in many cases, has not replaced sweet clover or alfalfa. The action of farmers during 1943 may change this prospect to some extent by using some of these newer forage crops.

Honey Market: The 1942 crop production has already been sold. The consumer demand is steady and people are more honey conscious than in previous years. All beeswax has been sold to bee equipment concerns or to concerns in the war industry.—R. L. Parker, State Apiarist, Manhattan, Kan.

COLORADO, Feb. 4

Weather: Although I have not been at home for over two months, almost daily reports have come to me that the weather in Western Colorado has been mild and sunny. Although bees should winter well, we are almost certain to have a dry season in '43.

Market: Inquiries for carlots of honey have about quit coming. Local demand has also slackened. It seems that people are becoming reconciled that honey is a scarce article. It is to be hoped that the psychological effect is good. I think it can be. However, we must not let our old customers forget us, nor the ones who would have been new customers, if we had had the honey to sell them. A good strong Institute is the best answer to this. Nature supplies the "makings" for a good honey crop, but we, the beekeepers and honey packers, supply the "makings" for a strong Institute.

Miscellaneous: It was mentioned above that I had not been home since November. Nope, not on a vacation either.

Dr. Phillips once said (I had just told him that I used to be a carpenter) that more beekeepers were ex-carpenters than almost anything else. My carpenter training is once more coming in handy.

Although I know beekeepers pride themselves on having leisure during the off-season, this war has made it very apparent that we are needed somewhere else besides in an easy chair. Many beekeepers are now using this off-season to extend their services beyond the production of honey and wax. A few more war bonds will be good insurance against what times may be ten years hence as well as give the owner the satisfaction of knowing he in helping keep our country the America we have known so long.

Our plans were for more bees in '43. But the difficulty in securing package booking; the shortage of help; and the limitations on supplies and gasoline have about convinced us that our old plan of "fewer colonies, better managed" is still the best.—John W. Holzberlein Jr., Grand Valley, Colo.

MANITOBA, February 6

Weather: January gave us steady cold down to 45 below zero and seldom rising above ten below for the entire month, but February, so far, has been more reasonable in temperature. The ground has been well covered with snow and only trunk highways have been kept open.

Beekeepers' Convention: The 1943 Manitoba Convention met in Winnipeg last week. The attendance was very good and there was an air of optimism that has not been experienced for several years.

One man who held his carload of honey reported that he sold it for 16c a pound at his station. It was packed in the new 70-lb. butter box type of packing. His check ran close to $5,000.00. This requires some explanation. The 12½c a pound ceiling in Canada has no bearing on the producer. He can sell at any price he can get. The military establishments are taking a lot of honey and there is no regulation of price to these set-ups.

Undoubtedly there will be a lot of idle equipment in this province next spring, as many of our young bee enthusiasts are in the Army and farm help is scarce.

Miscellaneous: The system built up in late years lends itself to marked changes. If the bees had not been killed last fall, the equipment would have been worked some way but, when the bees are dead and the equipment stored, it is likely to remain in storage.

Supply men report a big demand for new equipment but lumber and nails are almost unobtainable. Orders for package bees are being placed much earlier than usual.

There is no shortage of sugar for feeding but an uneasiness has been created by beekeepers' associations continually passing and sending to the government resolutions asking for sugar for feeding bees. Beekeepers read the papers and proceed to the cellar to see if the bees need feeding.

One man called for a sugar permit. He said, "I thought my bees were dead. I carried some hives up into the house. The bees seemed dead. After the hives sat in the kitchen a little while the cluster be-

XUM

gan to open up and the bees were all right after all." Such disturbance in February is a very serious matter. It is a long time until the middle of April which is as soon as these bees can get a flight.

Extensive exhibits of fibre and waxed paper containers were an interesting feature of the Convention. The change from tin has created some commotion among the larger producers but there seems no escape and glassware and paper must be made to serve until this war is over. —L. T. Floyd, Winnipeg, Manitoba.

• • •

WYOMING, February 5

Weather: Winter struck about the last week in November with 6 to 8 inches of snow and steady cold until about New Years when most all of the State experienced several days of warm weather with temperatures in the fifties, giving bees a good flight. This was followed by sub-zero weather for about three weeks, and although it has moderated the thermometer has not been above freezing except for very short periods of a few days.

Crop: The 1942 crop was a little below the 1941 yield, except in Fremont County which had a heavier production than last year, estimates being 1,500,000 pounds for 1942 which is not bad for one county in a cow country. There is very little honey left in the hands of producers anywhere in Wyoming, not enough in most areas to supply local demand until another crop is harvested.

Miscellaneous: The subject of market can now be described in one word, "vacuum", a decided contrast with little over a year ago. However, now is not the time to relax on sales promotion of our product. While the public is manifesting an interest in honey is the time to tell them all we can about it, and that's not very much. For instance, if you ship across your State line the Food and Drug Administration will not permit such terms as "Health Sweet" on honey labels. With research being the order of the day, and health such an important factor in a Nation at war, now should be an opportune time to try to interest some of our government officials in further investigation into the food and health value of honey. When the big letdown comes following the end of this terrible war, if it could be established authentically that honey does have some virtues not found in other sources of carbohydrates, and determine whether the things doctors and others have written about honey are true or false, the honey industry might not experience another market collapse such as we just passed through.

Thus far bees are wintering well. Some beekeepers are ordering package bees to fill idle equipment but the help problem will not permit much expansion. There is still another factor which forbids increasing the number of colonies, and that is, considerable acreage that has been in alfalfa and other legumes is being plowed up for beans and other farm crops.

Montana and other neighboring states have active beekeepers' associations but during the lean years our Wyoming association died peacefully. This is an important matter and even though our State is one of magnificent distances we should be organized. How about it, boys?—Earl C. Reed, Ranchester, Wyoming.

• • •

ARIZONA, Feb. 2

Weather: We have had about two good rains locally since last September, but dry weather is the rule for Arizona. More rainfall will be necessary for the desert areas of the State if we get a crop the coming season. Honey crops throughout the farming areas depend on irrigation.

We have had more cold wind during January than usual. Our windy weather is yet ahead, in March and April usually. Colonies are never packed for winter here.

Condition of Bees: As usual this varies with each locality. Bees generally are in fair condition. Locally bees are in fine condition. In some areas they are already gathering pollen and brood-rearing has started. We do not have any very early light flows of nectar to stimulate brood-rearing as in some states.

Spray poision continues to give considerable trouble throughout the farming areas near cotton. Many colonies were killed last fall from this trouble. Several stated they could have harvested a much larger crop

had it not been for loss of bees from poison spray.

Miscellaneous: As for extra production for the winning of the war I believe producers do their best to produce at all times. Weather conditions at the time of honey flow have more to do with one's honey crop than most anything else in this area.

Help for harvesting the honey crop is going to be a very serious problem here. High school boys would be fine if we could get them, but for some of us our harvest starts before the school term expires.—Leslie Wedgworth, Oracle, Arizona.

• • •

MINNESOTA, Feb. 9

Weather: January has been much colder than a year ago. Also, more snow has fallen, which will protect the bees and plants and later furnish soil moisture.

Bees: Both cellar and outdoor packed bees were certainly held back from too early brood-rearing by the cold January. And, less honey stores were consumed. Although some beekeepers expect a considerable winter loss, our experience is that bees come through a cold winter in better shape than a warm winter.

Honey: Bulk honey prices have levelled off at the Government ceiling, without particular discrimination as to color or flavor—"It's all good honey"! With a provident differing in honey tastes, that which is one man's poor honey is another man's best. However, retail honey prices have advanced somewhat in response to amendments to price regulations. Packers have found honey supplies so meager that many would be willing to pay above ceiling prices if permitted to do so. Next fall, when producers are again holding stocks of honey, they may reasonably expect a higher ceiling price, in view of the continually rising prices of many other commodities and labor's insistent demands for dollar and two dollar per day increases. What's sauce for organized labor should be sauce for American producers!

Miscellaneous: Most beekeepers accept the curtailment on beekeeping supplies manufacture, scarcity of experienced labor, and other war measures, with resignation, and carry on as best they may. A small increase in number of colonies and in amount of equipment is anticipated, but there is a noticable determination to use available equipment to the utmost.

A number of beekeepers report the outlook for White Dutch clover is excellent, but that sweet clover is being grown less each year, with more and smaller beeyards in prospect.—Bruce L. Morehouse, Montevideo, Minnesota.

• • •

NEW YORK, February 7

Weather: Steady almost unbroken cold has been the weather record since the middle of November, there being no days warm enough for bee flight. On February 4 and 5 the weather moderated somewhat and temperatures got up around 45 and some colonies in well protected places flew a little and according to observation in our own apiaries the bees did not show any signs or dysentery.

Honey Market is very strong and stocks are nearly depleted. Some honey is being imported from other states and is meeting with ready sales. There is really a dearth of honey and we hear of many beekeepers being offered prices several cents above the so-called ceiling. The last government crop report quoted sales in Northern New York at figures greatly in excess of producers' ceiling prices.

I hesitate to mention ceiling in these notes as the subject cannot be justly handled so briefly. I am in full accord with the WPB order M-118 which directs the distribution of honey into the regular and established channels of consumption, and not allowing it to become a temporary substitute of sugar for manufacturing purposes to be abandoned again when sugar becomes available.

I doubt that price ceilings on honey have been of any benefit to either the producers or consumers or to the commonwealth. I might justify the above statement by supplementing a whole chapter but the simple statement is sufficient for this time. The whole price order although somewhat simplified by recent amendments is altogether too complicated and un-understandable.

The assumption that extracted honey is not a raw agricultural prod-

XUM

uct is, to my way of thinking, just plain silly. A level base wholesale price ceiling for the whole United States also seems to me to be silly and unjust because, basically, costs of production vary greatly. Regions where lower average yields occur are placed at a disadvantage with those where large yields are obtained. The probabilities are that the bees in the low-producing areas are of greater national importance in the work of pollination than are the more profitable bees in regions of greater honey yields. However important limiting orders, price ceilings, and other marketing regulations may be, they are not going to bother many of the larger and progressive beekeepers of this state. We now have efficient cooperative marketing facilities with management that is capable of taking care of all the worries of merchandizing allowing the beekeeper to concentrate on producing much-needed honey and wax. To that end all beekeepers pledge themselves so long as the need exists.

Prospects and Conditions: The summer of 1942 was a good growing season. Clover plants got off to a good start and went into winter in more than average good condition. The snow covering has been excellent all winter and prospects for a good clover crop are all that can be hoped for at this time. The shortage of farm labor will probably lengthen out and delay the cutting and harvesting of both clover and alfalfa which may help prolong and increase the honey flow. Basswood did not yield very heavily last season, so according to averages we might expect it to be a good yield in 1943. Buckwheat grain is very scarce and high priced. This may mean a shortage of seed for 1943 so that the acreage of this important honey plant may be less than normal. Buckwheat growers may well look to their supply of seed early or they may not have any to sow.

Bees went into winter quarters in good average condition and are wintering well. With the possible prospects of a world wide food shortage there can be little doubt that there will be a good demand for any crop that may be produced this year. Other than for the shortages of materials, labor, and supplies I believe 1943 prospects to be good for beekeepers in this state.—Howard M. Myers, Ransomville, N. Y.

NEW JERSEY, Feb. 5

Weather: The larger part of New Jersey was served with weather which was not conducive to bees securing a crop of honey the past season; in fact, it was the most disappointing season in 35 years.

The promise of a crop, judging from the nectar-producing plants and the blossoms on them, was never better. However, stormy weather during the blossoming period allowed bees but little time to gather nectar.

Presumably weather conditions were responsible, but whatever the cause, nectar-secreting blossoms, particularly sumac and asters, had an exceedingly short blossoming period. Usually sumac will be in blossom nearly three weeks. This past season, the blossoming period was reduced one week, and in that period a shower reduced the gathering time to approximately five days. This short blossoming period prevailed throughout practically the entire season.

Abundance of ground moisture at this time gives promise of favorable clover conditions for the coming season and there is a good stand of clover plants.

Market: The sugar shortage has caused an increased demand for honey. Retail prices have advanced some. No one seems to be able to learn from OPA publications what ceiling prices should be with the result that practically all the thousand or more small New Jersey beekeepers who retail some honey are going ahead selling at such prices as they consider fair, waiting for clarification of OPA documents.

Condition of Bees: The condition of bees is not all that could be wished. Far too many colonies went into winter with much less than the full-depth second of stores which is considered necessary for best results. Also due to the disappointing fall flow, colonies are not as populous as could be desired. However, clusters appear to be made up of a larger proportion of young bees than is usual. They seem to be wintering well so far. They had a good flight on Feb. 5.

Miscellaneous: Some of our beekeepers have out-apiaries which necessitates the use of a small truck.

First reports show the ODT cut to a considerable extent the requested allotment of gasoline. Information is at hand that at least one beekeeper, after considerable report making, has been allotted the amount originally asked for.

Entirely melting down combs which have a small amount of drone-size cells may bring more wax onto the market. However, it is debatable if this is the best policy in the long run. Either one of three plans may be used to have drone size cells replaced with worker comb: (1) When a colony builds cells in preparation for swarming, make a nuke with one comb with queen cells, one comb with stores and one comb from which the drone cells have been cut, with bees enough to cover the combs. When the young queens get to laying, the faulty comb will be repaired with worker cells; (2) cut out the drone cells and patch in a piece of comb of worker size cells; (3) cut out the drone cells and fit in a piece of foundation a-la-Dr. Miller. One can use the plan which best fits his circumstances.—Elmer G. Carr, Pennington, N. J.

• • •

ONTARIO, Feb. 4

Weather: For the last two months King Boreas has been in complete control of the weather here in Ontario, and as a result we have had more zero and subzero weather than has been recorded for many years. Precipitation, at least 90% in the form of snow, has been very heavy and Toronto district has had nearly four feet since the winter started. Snowfall has been much greater in districts north, east, and west of here, and in mid-January a disastrous rain and sleet storm visited a large area west and southwest of Ottawa. Snow has covered the clover continuously since the first fall, and at this date, Feb. 4th, we have nearly two feet in the fields.

How are the bees wintering? A little too early to make an estimate but from meagre examination made of a few apiaries visited, would say that so far as one can judge by external appearances, they seem to be normal. On Jan. 29th we visited that apiary where we prepared 18 colonies last fall, by wrapping in two thickness of asphalt paper, with no packing whatever, two full-depth stories, with a very small entrance left at bottom and a ⅝" hole in the middle of the top story. Contrary to expectations and wishes, we found these bees practically unprotected by snow, although all other apiaries visited have abundance of the "beautiful" piled around and in many cases over the hives. This apiary is in the southeast corner of a large orchard. Fair protection from north and west but open to southeast. The last big storm was from the southeast and it cleared snow away from these 18 hives, leaving only enough snow in front to close bottom entrances. This will be a severe test no doubt for this method of wintering—a method which we frankly admit to have little faith in. Just a few days ago we had a nice letter from a well-known commercial beekeeper in Minnesota, and he says that several years ago on urgent advice of some friends, he tried exactly the same method in wintering an apiary of 50 colonies. By mid-February 35% were dead with ice formed under the covers of the hives, and by spring there were only a few colonies alive and they were nearly all weaklings.

Miscellaneous: When in Toronto today we were speaking with Mr. T. H. Shields, manager of the Ontario Honey Producers' Co-Operative. He informed me that they are having trouble in getting delivery of fibre containers for packaging honey—or possibly we should say paper containers. While we are still hoping to be supplied with the regular 70-pound tins, it is certain that for the small size containers no tin will be available. Possibly it would be a good plan to order these containers very early if delivery is so slow. We have quite a fair supply of "fours" and "eights" left over from last year, owing to the very lean crop of 1942, so we will not at this stage worry on that score.

There is very little honey on hand, Mr. Shields said, and none in prospect for delivery before the 1943 crop. At every business place visited today in Toronto, at least one party in each place was begging us to bring in a pail of honey on our next visit. This is a condition never before experienced and not likely to be duplicated again.—J. L. Byer, Markham, Ontario.

Editorials

Plan your work, then work your plan is a safe rule to follow. Beekeepers in securing the maximum crop of honey and wax this coming season should do this very thing.

• • •

Lack of man power, we are afraid, will be one of the handicaps for a maximum crop of honey for a beekeeper having less than 300 colonies. One who has that number or more is subject to deferment but the great bulk of the honey produced in this country comes from beekeepers with less than 300 colonies. Beekeepers will have to learn to get along with fewer false motions in the production of a crop—in other words they will have to get along with less man power. During late years, we have been advocating top supering instead of placing supers under those partly filled. There are a good many beekeepers yet who go through with the back-breaking operations of lifting all of the supers over and then repiling them with heavier supers on top. It should not be forgotten that top supering is not a new idea. It has been in use in Europe for centuries back. Beekeepers across the water have been trying out the two systems with the result that they have satisfied themselves that just as much honey can be secured by top supering as by the back-breaking method which, in the case of comb honey, results in many unfinished sections.

• • •

War Production Board announced recently a change in the Farm Machinery and Equipment limitation order L-170 which eliminates the bee hives from the restrictions of the order. Other equipment not a part of a beehive is still under L-170 and subject to the restrictions on production. This includes honey extractors, bee smokers, hive tools, veils, etc. Recent action of W. P. B. has increased quotas on this equipment for class C manufacturers to 50% of 1941 production. While the supply manufacturer is no longer prevented by quota restrictions in the manufacture of hives he still will be limited by the natural laws of supply and demand on both lumber and labor; also by the fact that announcement of the elimination of quota restrictions comes three or four months late to allow him to purchase lumber in sufficient quantities to produce a large amount of hive material this year. We believe that a satisfactory amount of beekeeping supplies will be produced although it probably will not supply the demand entirely.

• • •

Stock Resistant to AFB Still in Experimental Stage In a recent letter from O. W. Park, Iowa State College, a pioneer in the development of resistant stock, he writes:

"I am impelled to state that resistant stock is still in the experimental stage and, unfortunately, does not maintain itself without constant selection and careful breeding based upon reliable tests for resistance, hence daughters of unproven mothers are not to be relied upon for resistance. Personally I doubt the wisdom of advertising such stock. It is my well-considered opinion that any well-informed queen breeder who values his reputation, will hesitate to advertise resistant stock until he has access to a goodly number of breeder queens of proven resistance and reasonable assurance that proven breeders will continue to be available to him year after year."

This statement coming from a pioneer research worker of Iowa State College, Ames, where most of the work along this line has been carried on, should make any advertiser hesitate before he announces to the public that he is ready to furnish resistant stock.

While Gleanings emphatically favors the work now being done along the line of developing stock that appears to have a high degree of resistance to a AFB, we think it is a mistake to advertise this stock, because, as Mr. Park says, "Resistant stock is still in the experimental stage".

• • •

Nosema Apis, formerly called "May disease" and "disappearing disease", probably is more serious than we were led to believe in the earlier days. Recent scientific work by the U. S. Bee Culture Laboratories under James I. Hambleton, particularly by Dr. C. L. Farrar, points to the possible and probable fact that it may be one of the prime causes of premature supersedure of queens and of losses of bees in winter. Nosema is an insidious disease be-

cause the bees affected may not show any abnormality of any kind, yet, those same bees, **apparently** healthy, may be the first to die in winter when other colonies of like strength come through in fine order. Nosema does not show in the queens, and yet may be the real cause of early supersedure with the possibility of reinfection of the queen and the bees later on.

• • •

Educating Farmers on Pollination At least three speakers appearing on the program of the Ohio beekeepers' meeting recently, mentioned the importance of honeybees in the pollination of fruits, vegetables, and clovers. In view of the necessity for legume seed production to enable each farm to produce its own nitrate fertilizers, also the maximum production of fruit and vegetables it will be increasingly necessary this coming season to have adequate honeybee population properly distributed to help insure maximum pollination.

In view of the apparent lack of bees in some regions to bring about maximum pollination it was suggested at the recent meeting that each beekeeper contact five farmers with a view of disseminating authentic information on pollination. It was decided that some printed matter containing pertinent facts regarding the value of bees in pollination to give to each farmer, would prove effective. Beekeepers' associations could help to carry out such a project. (See page 168.)

• • •

Standardization Needed in Shipping and Hiving Packages During the past few decades various types and sizes of bee shipping cages, methods of shipping (especially queens in packages), also methods of hiving packages have been evolved. In the interests of simplification, especially for the beginner, it would seem that there should be a standardization of cages, also methods of shipping and installing packages and queens. There must be one best cage and method of shipping and installing bees, that will meet requirements generally.

Obviously, the present situation with respect to limitation on material used for shipping bees should encourage the standardization of a shipping cage. We hope it may be possible also, in the near future, to standardize methods of shipping and hiving packages. This would mean that directions for hiving packages would be standardized and simplified. This would help receivers of package bees, especially beginners who buy packages, to secure more satisfactory returns on their investments. It would also help those engaged in bee extension work to supply more intelligent information on packages.

• • •

Bees as War Workers This is the caption of a release from U. S. Department of Agriculture, as of Jan. 18, 1943. The following excerpts from it emphasize the importance of honeybees, especially during the present war emergency:

The Government is calling on the Nation's half a million beekeepers to expand production of bees, honey, and wax in 1943 to help meet food and other war needs.

Big reason for the drive for more bees is to insure pollination of legumes, and other seed and fruit crops that require insect pollination. The legumes in particular are needed to provide feed for livestock, and to make up the shortage of nitrogen fertilizer.

The U. S. Department of Agriculture reports that the supply of legume seed harvested from the 1942 crop is not adequate to plant all the legumes needed this year. We do have a carry-over from past years which help as far as 1943 is concerned. On the other hand, unless legume seed production is greatly increased, the United States will be unable to meet its own needs in 1944 and cannot help to meet shortages of legume seed among the United Nations. Besides legume seed, our Allies also need millions of pounds of vegetable seed to restore food production in devastated areas.

Beekeepers Recommended for Deferment

To encourage bee production, the Department has recommended to the War Manpower Commission that beekeepers be given serious consideration for deferment, under the Selective Service System.

Gas and Tires for Beekeepers

If beekeepers have trouble getting gas and tires to look after colonies of bees located near or moved between fields of legumes, orchards, and other crops, they can contact their county farm tranportation committee. This committee advises Government agencies handling certificates of war necessity for trucks, and tire and gas rationing on farm transportation needs.

Department officials think those aids—along with the wholesale ceiling price to the producer of 12 cents a pound for honey in large lots—will encourage many bee-

keepers to hold on to their bees and to expand production.

By raising more bees, and keeping the bees near legumes and other crops that need to be pollinated, beekeepers help to meet war food goals, and to provide seed to help fellow farmers of the United Nations get back on their feet.

• • •

Climate and its Effect on Wintering This subject has not received its proper consideration. That is another way of saying that temperature and moisture, or a combination of the two will and should modify our ideas on how we should prepare our bees for winter. A number of English writers have gone on record as saying that in the moist, chilly atmosphere of England, bees winter better in single walled hives than in double; not only that, but they produce the larger crops.

It would be folly, however, to say that a single-walled hive is better for all localities. Where the mercury drops down and hovers around zero for long periods of time, obviously, hive insulation (that means heavy packing) with means for the escape of moisture, is essential.

In a moist, damp climate, especially where there is much fog, a hive collects moisture and makes the bees damp with the result that they may die.

On this point we refer to what E. B. Towner says in Bee Craft,and reproduced in The Bee World, for March, 1941. He says that "single-walled hives are superior to double-walled hives, on the strength of the observation that in his district the double walled beekeepers had the heaviest losses and the poorest crops last season." The editor, Miss Betts of The Bee World, in commenting on this, calls attention to the"possibility that bees may begin breeding earlier in single-walled hives; this owing to the heat of the sun reaching the cluster more easily. Double walls keep out cold, but when a hard winter has made both hive and packing thoroughly cold, they also keep it in, and put a brake on early breeding."

• • •

Out-apiaries May Need to be Rearranged It seems apparent that present conditions may force some beekeepers to do what they perhaps should have been doing in the past. For example, during the days of plenty. when little or no consideration was given to the use of gas and rubber, out-apiaries in some instances were located with little thought to their distances from the home base.

We have known of cases where out-apiaries were located over 200 miles from home. To make the round trip in a truck would take ten hours and possibly longer. If the owner and driver of the truck carried along two helpers, that would amount to thirty man hours, not to mention the 400 miles of travel consumed in transportation.

The only possible way in which the owner of this out-apiary could hope to make it a paying proposition would be to secure enough extra honey and wax from this yard to more than warrant the extra expenditure in man power and milage. To make the project worthwhile, he would have to secure an unusually large crop of honey and wax.

During this present situation, commercial beekeepers will be forced to combine out-apiaries, in some instances, to cut down on truck milage, as well as labor. It may be necessary also to move some out-yards nearer to the home base.

Assuming that a region is favorable for beekeeping, apiaries may be located four miles apart. Without taking into consideration the hives of bees that may be found between such commercial yards, 4 miles apart, each commercial apiary would have a foraging range of approximately ten thousand acres. This hardly seems possible but such is a fact.

Assuming that each commercial apiary had 100 colonies, this would mean that each hive of bees would have access to 100 acres. Assuming that each 100 acre farm had ten acres of clover, this would mean that each colony would still have access to ten acres of clover, which, under favorable nectar secreting conditions, should give a good crop. And so, the danger of overstocking in a good beekeeping region is perhaps not so great as we have been led to believe.

Some few years ago, a large producer of comb honey kept 300 colonies in one yard. For a few years he moved a part of his large apiary to a new location four or five miles away. He found that both apiaries did not make any higher per colony average surplus of honey than did the large yard before it was divided.

This matter of apiary locations should be given due consideration before the active season arrives.

SELECTIVE SERVICE AS IT AFFECTS BEEKEEPERS

United States Department of Agriculture, Bureau of Entomology and Plant Quarantine, Division of Bee Culture, Beltsville, Maryland.

Office for Agricultural War Relations of the United States Department of Agricultural transmits the following information of interest to beekeepers:

National Headquarters Selective Service System, Washington, D. C., under date of January 16, 1943, Local Board Release No. 175, which is an Amendment to Local Board Release No. 164, lists honey as an essential farm product and specifies 25 colonies of bees as equal to one war unit, the conversion factor being.04. A person with 400 colonies of bees (400x.04=16) would have 16 war units.

Local draft boards can use their discretion as to the number of war units which will be accepted for deferment of one essential farm worker. As few as 8 war units might be acceptable in some cases and in excess of 16 required in others. Beekeepers should understand that the figure "25 colonies of bees being equal to one war unit" is in the form of a recommendation from the Selective Service System to local draft boards. Such boards are not under legal obligation to use this or any of the other farm products conversion factors. This is an attempt, however, to guide the draft boards that some degree of uniformity may be obtained in evaluating a worker's usefulness for the purpose of deferment.

Essential farm products are listed in Release No. 175, each with its war unit conversion factor, for example the following items equal 1 war unit —1 milk cow, 30 feeder pigs, 75 laying hens, 10 acres non-irrigated alfalfa hay, 20 acres of wheat, .7 acre small fruits, etc.

War units in case of mixed farming would be computed as follows:

	Animal Units or Acres X Conversion factor	War Unit
8 acres Irish Potatoes	8x .50	4.00
2-½ acres Tomatoes	2.5x1.00	2.50
5 Milk Cows	5x1.00	5.00
12 Feeder Pigs	12x .03	.36
100 Hens	1x1.30	1.30
100 Colonies of Bees	100x .04	4.00
	Total War Units	16.86

January 22, 1943

GASOLINE RATIONING AS IT AFFECTS BEEKEEPERS

United States Department of Agriculture, Bureau of Entomology and Plant Quarantine, Division of Bee Culture, Beltsville, Maryland, January 20, 1943.

The following information is available through the Office of Agricultural War Relations:

Gasoline rationing, while of the utmost importance to beekeepers, must be considered sensibly in the light of the present emergency. Beekeeping must be carried on to meet the needs for bees for pollination and for the production of beeswax and honey, yet in spite of the urgency, no beekeeper should expect to get all the gasoline and rubber that he would normally need. Everyone will be inconvenienced and will have to resort to economy and ingenuity.

The Department fully realizes the necessity of maintaining essential agricultural transportation as an integral part of the production and marketing of necessary foodstuffs. This fact is also realized by the Office of Defense Transportation and they have asked the County Farm Transportation Committee of the County U. S. D. A. war boards to receive and consider appeals for adjustment of mileage and gasoline gallonage on Certificates of War Necessity.

The full procedure covering the handling of these appeal cases by County Farm Transportation Committees and the district offices of the O. D. T. has been prepared and mailed to these agencies. This procedure contains a provision that the district office of the O. D. T., in issuing a corrected certificate, shall abide by the recommendation of the County Farm Transportation Committee. Appeals from beekeepers will thus be considered by a group fully acquainted with local conditions and local agricultural practices. The procedure further directs the committees to handle appeals for all trucks owned by farmers and beekeepers and for all trucks exclusively engaged in hauling farm products from the farm or farm supplies to the farm. Trucks that divide their services between hauling farm products or farm supplies and other activities will make their appeal direct to the district office of the O. D. T. which in turn will call upon the County Farm Transportation Committee for a recommendation as

(Continued on page 181)

The "Washington Angle" to a Beekeeper

By Lewis M. White

As the one selected by the beekeepers present at Chicago to be their official representative before governmental groups, I have just spent nine days in Washington, and perhaps a brief statement of my reactions might be of interest at this time.

In view of other reports about the Chicago Conference I will confine my statements to the Washington conferences and activities, except to mention the urgent need for greater producer participation in all such meetings, and the ultimate affiliation of all organizations into one center where unified programs may be developed and sponsored. Much greater recognition is always given to such programs, present and future.

In Washington I was accorded every courtesy and met many of the "higher-ups" in the Department of Agriculture, in the War Production Board, and in the Office of Price Administration. My contacts in Agriculture were greatly aided by the friendly interest of Senator McNary, of Oregon. I realize that I have seen only a portion of the men who are in some degree connected with the bee and honey regulations or activities in Washington, but I met enough to realize that the liaison work with other governmental organizations now being done by our good friends in the Department of Agriculture, Mr. Hambleton, Mr. Clay, and Mr. Nolan, must take considerable time. I can see that a Washington representative of beekeepers, and allied interests, as advocated at Chicago, could at this time easily put in full time on such contacts and in constructive work for the industry. Beekeepers would benefit very much if all information and problems could be centered in one office.

Price Ceilings for Honey. Two days were spent at conferences held by the Office of Price Administration regarding price ceilings for honey. The resolution regarding ceilings which was passed at the Chicago meeting was submitted to OPA, but most of these items were given little consideration. It seems apparent that OPA will insist on a flat ceiling as the basis for the new order which is now being developed, and that the arguments for a formula-type ceiling will receive little attention. Packers whose ceilings under MPR 275 are too low to permit of packing at a profit will probably be given early relief in the form of an optional flat ceiling at the packer level that will be a price higher than they can use now.

It also appears certain that many weeks will elapse before the new ceiling basis will be ready for release. For this reason it is important that all packers, large and small, understand and follow the procedure outlined in MPR 275, and amendments effective January 19.

Honey Allocation Order. Calls were made also on the officials in the Department of Agriculture who administer Order M-118, the allocation order formerly handled in the War Production Board. This order has been very valuable to the industry during the past year in maintaining a fair share of the honey crop for the home trade, and the present administrators of the regulation will, I feel sure, see that it is not weakened in any revision that might be necessary.

Honey and Beeswax Goals. The Chicago Conference called on the Department of Agriculture to establish a goal for honey production in 1943 at 275 million pounds, for increased production of beeswax, with price floors to give stability to the industry, and requesting the Department to endeavor to secure from the War Production Board adequate supplies for reaching these goals.

Two conferences regarding the honey goal were held with Dr. D. A. Fitzgerald, Deputy Director of the Food Production Administration, who is in charge of the work dealing with agricultural planning. We were all impressed by his practical approach to the problem, and by his keen questions which went to the heart of the matter. If the administrative details of the goal program can be handled without difficult complications I believe that evidence of official support can be expected soon.

Since leaving Washington, Roy Grout, of Dadant & Sons, has been there developing the background for a publicity drive to increase beeswax production. This too was receiving Dr. Fitzgerald's earnest consideration.

I want to emphasize that any program to increase production of honey, and to expand the beeswax output, is to be based, not on the value of the honey, but chiefly because of the need for a wide distribution of bees because of their value in pollinating legumes, fruits, and vegetables. This is very pertinent to all production programs at this time.

This value, which has consistently been brought to attention recently by Mr. Hambleton, is now receiving increased recognition.

Supply problems are tied in with Department of Agriculture goal or price support plan. (See page 160 regarding recent developments on hives.) In figuring purchases of 60-lb. cans it appears that either 1941 or 1942 whichever is the greater use may be allowed as a base period for can purchases in 1943. Glass containers in the economy line authorized for honey seems assured for 1943.

In conclusion I wish to state that I believe that problems affecting the beekeeper will be handled in the most satisfactory manner, giving due consideration to present conditions and to what may develop following this emergency. (See page 148.)

• • •

Spinster Jane Says

Candlemas Day was bright and fair, and far too cold for any groundhog to leave his comfortable burrow. And judging by the severity of the winter we have already experienced, we can look for more of the same. I can remember crows returning in February, in the long ago, but if they are wise birds they won't try it this year.

There was something disturbing the peace of those bees making so much fuss; mean, underworld creatures—mice, no less. I sent Boy an S.O.S. Last week he came to investigate, and found a mouse's nest inside the hive. If I could but let "Trouble" in the cellar, she would soon clean up on the mice nuisance, but it would end the bees too. Disturbing them usually means dysentery.

Last month I forgot to tell Boy's way to get extra combs to produce more beeswax, but think it is worth passing along to others. I am sure I told in a former article that in taking over all our beekeeping equipment, we got all sorts and conditions of hives. The former owner's beehouse became a sort of clearing-house for everything found in a bee-yard. He bought out the entire stock of several discouraged beekeepers. Besides providing him with extra supers, etc., it also did away with competition, insuring a much better market. But one is not likely to meet with opposition in beekeeping here in this district. Well, Boy took a number of old, deep, staple-spaced frames (over 25 years old, or older) wired in foundation to the depth of that of shallow supers, and put supers filled with these upon strong colonies, threatening to swarm. It worked like magic. The bees drew out the foundation, then built in new combs clear to the bottom, filled all with honey, capping it beautifully. Best of all, they did not swarm.

Boy extracted the honey, then cut off the built-on portion, frame and all, changing the bottom of the frames to fit this remaining frame, and, presto! He has now a number of fully - drawn - out shallow - super frames.

Last year Boy heard a queen piping for the first time in his life. He was planning to put on escape boards in a certain hive, and looked underneath the queen excluder to find the queen. He could not find her and considered her lost. He carried the frames to be extracted into the honey-house. There, any bees clinging to the frames find their way to the window, buzz about, and if left long, bunch together. At last he heard this shrill, thin piping noise, and could not understand what it was until he found a dead queen, later on. Then he knew. Now, why does a queen pipe, and when? Is it to call her own workers to her aid? A sort of "A moi"? And if so, why do not lost, clipped queens call in this way? Or do they?

I've come to the conclusion that a beekeeper to be successful must almost live with his bees, study their every action, and learn what each action means. They differ in temperament just as children do, and we have to know the child thoroughly and completely, in order to be able to cope with his faults. More power our real beekeepers.—Spinster Jane.

Ohio State Meeting January 27 and 28, 1943

Naturally, it was expected that the attendance would be much lower than usual but we were agreeably surprised to find it almost up to normal. Beekeepers came from all over the state, apparently for the purpose of learning something more definite on price ceilings on honey and wax, also when and where they could get bees, bee supplies, and containers for honey.

After the usual preliminaries, Dr. W. E. Dunham, Specialist in Beekeeping, led off on the subject, "Honeybees in the Pollination of Fruit, Vegetable, and Seed Crops.". Perhaps no man in all the realm of bee culture has done more personal work on this general subject than he. For years, he has been carrying on a series of experiments in and near the University, testing out the value of bees in the growing of fruits, legumes, and vegetables. Pollination has been almost a hobby with him, for he early recognized that the greatest contribution of honeybees was not honey and beeswax but pollination which means increasing the crops of the nation.

First, Dr. Dunham called attention to the excellent Circular, No. E-584, published by the Department of Agriculture, Washington, D. C. This can be obtained from the Bee Culture Laboratory, Beltsville, Maryland, for the asking.

He then gave some of the results of his own experiments with bees when placed in orchards, fields of legumes and vegetables, and showing how they have increased the yield of fruit, seeds, and vegetables from 1 to 5, even 1 to 10 in some cases. In the case of orchards, he emphasized strongly the importance of having compatible varieties so placed in alternate rows that trees, sterile to their own pollen, could be pollinated from other trees, which are called "pollinators".

It is here that bees do their important work of bringing about cross pollination. Extensive fruit growers should rent bees from beekeepers rather than attempt to buy them and allow them to become diseased and die. Small fruit growers, perhaps, could own their own bees.

Sometimes, fruit growers do not get the results they expect. This is due some seasons to several causes: No. 1, no flight days during the time the trees are in bloom; No. 2, too few bees to cover the territory; No.3, because of solid blocks of trees which are sterile to their own pollen with no pollinators; No. 4, the competition of dandelions some seasons when the trees are neglected by the bees.

Dr. L. H. Snyder, the new Chairman of the Dept. of Zoology and Entomology, promised that he would give every possible support in their work, which he regarded important in developing the food supply in the United States.

The next on the program was Miss Nelle Thompson, Dept. of Home Economics of the University. She explained that honey was an energy food, the most easily digested of any of the sugars; that while vitamins were present in small quantities, they form an important part of the nutritional value of honey. In the matter of calories, measure for measure, honey stands higher than any other sweet.

At this point Chas. A. Reese, State Apiarist of Ohio, introduced his boss, John Berringer. Mr Berringer, he said, recognizing the value of bees in pollination during these times, would consider requests from beekeepers for increased budget for inspection work to cover counties which have no appropriation. There was a responsive applause from the beekeepers. Later a committee was appointed to meet Mr. Berringer and express the needs of further funds to carry on the work of inspection in Ohio.

Mr. Reese, instead of giving the talk announced, gave an enthusiastic report of the Chicago meeting which he had attended on the 26th. He believed it was history, if not epoch-making, in that plans were made not only for the present but for the future. Further details appearing on pages 148 to 151. Mr. Reese announced that this general program would involve the distribution of bees over the country to produce a maximum crop of honey and wax, also for pollination. This would mean that the inspectors of the various states might have bees introduced from other states where there was disease. He was sure inspectors were willing to do their duty but it would mean the need of increased funds to take care of this inspection work.

On the afternoon of the 28th, Dr. Dunham spoke on the production of

more beeswax and methods of rendering wax. He explained the importance of hunting out, during winter, all of the imperfect combs and melting them up into beeswax. (This has already been explained in our colums of recent issues.) He mentioned the value of solar wax extractors to catch pieces of wax as they were picked up in the yard during the season. He showed a blue print that he obtained from the Iowa State College, at Ames, showing the construction of one of these machines. The wax from the solar wax extractors is of the very best quality, a bright yellow and ready for the market.

In the afternoon of the second day we were honored by the presence of James I. Hambleton, head of U. S. Bee Culture Laboratories, which are scattered all over the country, and also by Dr. C. L. Farrar, in charge of the U. S. Laboratory at Madison, Wisconsin.

Mr. Hambleton was at his best. He explained what these laboratories were doing over the country. He decided, he said, when war broke out, to turn their attention to the production of more honey and beeswax, and that has been the program. Whatever criticism there has been (not much of it) was based on misinformation. All those who heard Mr. Hambleton were pleased with what he had done. In the first place, he saw at once that honey might be classed as a luxury and that bee culture might be classed as one of the non-essential industries. Knowing, as he did, the importance of pollination and how it increases the fruit and farm crops, he bent his energies along that line. He had some little difficulty at first in persuading "the powers that be" at Washington of the importance of bee culture, based on pollination. As a result the Department of Agriculture has put out the Circular No. E-584, already mentioned, giving ample proof of how bees are increasing our food production. Mention of this has been made in our last issue, page 100. **It is the publication of this circular and Hambleton's work that has placed bee culture among the preferred industries, and were it not for this work, beekeepers would not have been able to obtain their sugar, their bee supplies, and their containers.**

Next on the program was Dr. C. L. Farrar, of the U. S. Bee Culture Laboratory, at Madison, Wisconsin. Details of this work will be given out very shortly in all of the bee journals. For the present, it may be stated that the work of this station in correlation with other stations has been epoch-making. It has tested out different strains of bees; has found some strains much superior to the common run, and has studied the general **behavior of a colony throughout the year.** The result is that Uncle Sam's bees have shown a great increase over the average of crops. The importance of pollen, much more of it than was thought necessary in the past, has been stressed. When there is not enough natural pollen, it is possible to use soybean flour mixed with 25% natural pollen which is trapped from hives at the time when the bees have the most of it. In the new practice colonies are enormous, occupying two and three stories of bees which have been wintered with and without packing.

Dr. Farrar passed around a photograph showing a three-story colony with sides and ends entirely open and exposed to the weather. While he does not minimize the importance of packing or insulation of the hive when needed, he has shown that the chances of good wintering are greatly enhanced when **internal** conditions of the colony are right. That means natural honey and plenty of pollen. The colony shown in the photo passed around, not only wintered successfully, but produced 40 lbs. of honey or above the average production for the state of Wisconsin. Now then, if a moderate amount of protection is added, whether packed or unpacked, the bees can and should increase the crop.

Neither Dr. Farrar nor anyone else recommends wintering colonies with open sides and ends. The purpose of the experiment is to show what a powerful colony can do under adverse conditions.

Dr. Farrar has found that Nosema apis, a disease not easily recognized, is responsible in many cases for loss of colonies, early supersedure of queens, and failure of the crop. All of this will be fully explained in an official circular sent out from the Madison Laboratory.

The following officers were elected for the coming year; President Emerson Long of Saint Paris, Vice President, Lawrence E. Hicks of columbus and Dr. W. E. Dunham for Secretary and Treasurer.

XUM

Talks to Beekeepers

M. J. Deyell

We Need More Honeybees

The honeybee population of U.S.A. is lamentably low, only one hive of bees for each (approximately) 387 acres. This does not include bees found in trees, crevices of rocks, and between sidings of buildings, in which there are many thousands of swarms.

I occasionally hear beekeepers talk about territory which they say is over-stocked with bees. Perhaps so, in very rare instances, but, generally speaking, there aren't enough bees to do a thorough job of pollinating blossoms. Here in Ohio, for example, we have, according to statistics available, one hive of bees for each, approximately, 90 acres and this state has more bees per square mile than most states.

Honeybees are vitally important, especially in this present war situation. Most commercial beekeepers are so close to their business that they perhaps fail to realize its importance. To get a vivid picture of just how important honeybees are we should read the new bulletin E-584, entitled, "The Dependence of Agriculture on the Beekeeping Industry," prepared by the Division of Bee Culture, Department of Agriculture, Washington, D. C., and available free for the asking at National Bee Culture Laboratories, Beltsville, Md. Here is just one sentence from this bulletin:

"The fertilization of plant flowers is so essential that beekeeping must be carried on to maintain a profitable agriculture, and **it may be necessary to subsidize the keeping of bees,** since there is no practical substitute for honeybees in the transfer of pollen from flower to flower and plant to plant."

It looks as though some drastic measures may have to be taken to propogate honeybees in this and other countries, to meet pollination needs, not to mention the salvaging of millions of pounds of honey and wax that go to waste annually for the lack of bees to gather them.

We Need More Beekeepers

Some of the older experienced beekeepers are passing on. Many of the young beekeepers have gone, or are going into military service. It behooves those of us who are left to help carry on. May I say (without seeming to be boastful) that I will have to take over the management of bees owned by my son-in-law, now in the service; these, in addition to the A. I. Root Co. apiaries, consisting of close to 1000 colonies, also seventy colonies of my own? There will be little or no time for golf this summer.

Beekeepers over the country will have to work harder than ever before and we are glad to do so, as a part of our patriotic duty in helping to put the tyrants where they belong.

No one clams to know exactly how many beekeepers there are in the U. S. A. Some have estimated the number to be 800,000. Obviously **we need more beekeepers** who are efficient and perhaps fewer keepers of bees.

We Need More Beginners

Yes, more beginners are needed, especially those who are really interested in beekeeping and have some aptitude for learning the business. It should be said also that those who appear to have only a casual or spasmodic interest in bees and are inclined to be careless and slovenly in the manipulation of hives should be discouraged, because such are not likely to be helpful but rather, detrimental to our industry.

Efficient beginners are needed to help fill the gaps here and there. If there were no beginners there would soon be no experienced beekeepers.

We should keep in mind the fact that beginners, as a rule, are enthusiastic and advertise bees and honey in their respective localities and thus help to make our citizenry more bee and honey-minded. (Such publicity is needed).

Beekeeping May Look Easy—But

To those unfamiliar with beekeep-

ing principles it may seem a simple matter to put some hives of bees under the apple trees, put on some supers, watch the bees carry in the honey, then take it off at the close of the season.

One reason some beginners make such a "botch" of beekeeping is that they fail to spend time to acquire a grasp of the few simple beekeeping principles and the application of same. As a result these beginners usually do the wrong thing at the wrong time in manipulating hives.

If beginners (and some experienced beekeepers) would remember that the requirements of bees are comparatively simple (**protection** from elements, **comb space** which means supers of combs given at the right time, and **food**—honey and pollen in abundance), and would supply these requirements, larger crops of surplus honey and wax would be secured, with the minimum of labor.

Beginning with Packages

Those who plan to secure package bees this spring should read articles in this issue by E. J. Anderson and Grant D. Morse. The main things to keep in mind are: (1), getting packages installed reasonably early, so they may build up to colony strength by the time the main flow begins; and, (2), keeping the bees supplied with combs and food until the major flow begins.

What About Hungry and Weak Colonies This Spring?

Due to adverse weather conditions last season also last fall, there are likely to be some starved and hungry bees this spring. We should make every effort to save them because they will be needed. The article by W. E. Dunham in this issue (page 140) explains the details of making and feeding sugar syrup. Those who have reserved combs of honey for spring feeding should exchange these, where needed, for empty combs as early as weather will permit opening hives.

Colonies that are weak, with bees covering not more than three or four combs on a cool morning should be strengthened with package bees.

L. L. Langstroth, sometimes called the father of American beekeeping has this to say about weak colonies:

"A beekeeper with feeble stocks in the spring, which become strong only when there is nothing to get is like a farmer who contrives to hire no hands to reap his harvest but suffers the crop to rot upon the ground and then at great expense hires a number of stalwart laborers to idle about his premises and eat him out of house and home."

A well protected "Bee Garden" owned by T. Alun-Jones, Abbey Villa, Rhuddlan, Flintshire, North Wales. Wind protection is advantageous for bees.

American Honey Institute News Notes

1942 was an unprecedented year for the **American Honey Institute.**

Unprecedented—in its financial status.

Unprecedented—in the amount of printed advertising that was circulated. (Over $8,000 worth of printing was done in 1942).

Unprecedented—in the volume of mail received.

Unprecedented—in the sponsoring of research on the vitamin content of honey.

Unprecedented—in the inauguration of a monthly news release to radio stations and newspapers.

• • •

The Institute shall redouble, not relax, its efforts to inform the public of the nutritive values of honey.

• • •

Among the honey cake receipts that received national publicity in 1942 were the following:

Aunt Jenny's Honey Chocolate Cake (Spry)
Honey Nut Cake—(Swans Down and Calumet)
Honey Fruit Cake—(None Such Mince Meat)
Honey Cake—(Rumford's)
Honey Chocolate Cake—(Arm & Hammer, or "Cow" Brand, Baking Soda)
Honey Pound Cake—(National Poultry and Egg Ass'n.)

• • •

Among the honey cookies that received national publicity in magazines and newspapers were the following:

Chocolate Frosted Honey Cookies—(Pillsbury Flour Mills)
Honey Peanut Cookies—(National Peanut Council)
Honey Coconut Cookies—(Arm & Hammer, or "Cow" brand, Soda)
Honey Chip Cookies—(Arm & Hammer, or "Cow" brand, Soda)
Toll House Cookies—(Nestles)
Chocolate Bits Honey Cookies—(Chocolate Bits)

• • •

Requests for "Old Favorite Honey Recipes" are coming in because of the "Plain Dirt Farmer's Diary" in the February issue of BETTER HOMES AND GARDENS.

• • •

Kellogg's news releases feature Honey Krisp Ice Cream.

• • •

Prem's advertisement in magazines suggests this delicious treat:

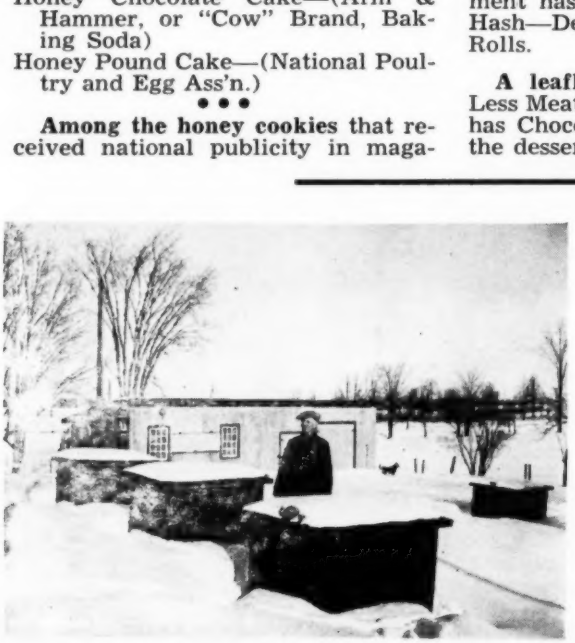
"Score two cans of Prem. Add cloves. Cover with honey. Bake at 400° for 15 minutes. Garnish with cranberries and holly leaves cut from green peppers. It's speedicious!"

• • •

Crisco's quarter-page advertisement has a recipe for Corned Beef Hash—Delicious with Honey Pecan Rolls.

• • •

A leaflet, "How to Eat Well on Less Meat", with meat-saving menus, has Chocolate Honey Cake listed as the dessert for one meal this month.



Huber Burke, of Omemee, Ontario, wondering how the bees are wintering. Temperature reached 40 below zero on one occasion. This picture was taken January 7, 1943, but Mr. Burke writes that the snow was much deeper on January 20 when he sent the picture.

Asked and Answered

Feeding Pollen Supplements

Question.—Lately I have read all the articles I could get on the feeding of a substitute for pollen to bees. I have tried several methods and here is my trouble: I cannot find anything or any way to get the bees to eat, or carry it to the hive. I tried soybean flour the other day, dry, mixed with milk, mixed with sugar syrup, also mixed with honey. The only one they worked on was the one with honey and only then to get the honey. As soon as that was gone they quit it. I tried to get some dry yeast but they say the government has it frozen. I wonder if damp yeast cakes would do.—F. S. Huston, Tampa, Fla.

Answer.—We suggest that you send to United States Department of Agriculture, Bureau of Entomology and Plant Quarantine, Washington, D. C., for their bulletin E-531, "The Use of Pollen Traps and Pollen Supplements in Developing Honeybee Colonies" by C. W. Schaefer and C. L. Farrar, Division of Bee Culture. The bulletin recommends mixing honey with soybean flour, also pollen if available. This mixture is fed in cakes placed directly above the frames of the brood chamber, under a rim to make room for the cakes and on top of a paper to prevent particles of the mixture from falling to the bottom board of the hive. It would seem from the bulletin, that it is necessary to have at least 25% pollen mixed with soybean flour and honey, adjacent to the bees in order to have them use it to full advantage.

Simplifying Swarm Control Methods

Question.—I have some colonies in standard hives. I use the food chamber and when fruit bloom comes on I put the queen in the lower hive body below the excluder. Every week end I go through these colonies and put all capped brood in the upper body and empty frames in the lower one. When I shake the frames before putting them in the upper body it disturbs the bees and is lots of work. Is there any way I can let the queen have the run of two hive bodies and still prevent swarming? What date would be the best time to unpack in this region? I have been unpacking about April 27 or fruit bloom time.—Jack Ohl, Iowa.

Answer.—Your method of swarm control should be effective, but, as you say, it requires considerable work. It is difficult for us to give out information on swarm control that will apply equally to all localities. As a matter of fact, this is impossible. You do not say whether or not you are producing extracted or comb honey. If you are producing extracted honey you could put an extracting super with drawn combs on each two-story colony at the beginning of fruit bloom and allow the bees, also the queen, to work up into the combs of this super. It would do no harm for the queen to occupy these combs temporarily. As a matter of fact, in extracted honey production it would be perfectly permissible to add another super, without the use of a queen excluder, at the beginning of your main honey flow, sometime around the first of June. After the honey flow is well under way, it would seem advisable to put the queen back down into the single-story brood chamber, under a queen excluder. By doing this, the bees would be attracted up into the supers, by reason of there being brood in the combs. As the brood emerges from the comb in the supers, the bees will fill the cells with honey. Regarding unpacking, it would seem advisable to put this off until settled warm weather comes, if you can do so without hampering your spring manipulations.

Colonies from Package May Swarm

Question.—A beekeeping friend of mine told me that package bees will not swarm the first year even if crowded a little . Is this true?—L. E. Dickerson, Minnesota.

Answer.—A colony of bees developed from a package may swarm that same season, under certain conditions. Such a colony is less likely to swarm, however, than an overwintered colony.

How to Clip a Queen's Wing

Question.—What is the smallest amount of the wing that can be taken off and still prevent the queen from getting away?—W. H. Barker, Iowa.

Answer.—We consider it necessary to clip about one-half of the longest wing, on one side, diagonally. This will prevent the queen from flying away. Some clip the two wings down near the base. This is unnecessary.

Making Feeders Leak Proof

Question.—I have two types of bee feeders, the Doolittle and the Miller. Each time before using them I have to soak them in water so the wood may swell and close the cracks around where they are nailed together. If I line them inside with light tin or make the tin feeder fit the wood feeder very tightly, could the bees crawl on the tin as well as on the wood?— Joseph S. Higginbothum, Virginia.

Answer.—To make your feeders leak proof, fill an oil can having a reasonably large spout, with paint, and apply it by means of the oil can to the inside of your feeders at the joints. This should be done periodically each two or three years.

Bee Industries Association of America

This association was formed late in 1941 because of the dire need of the bee supply manufacturers to have someone represent them before the War Production Board at Washington, D. C. Previous to the organization of this association, valiant work had already been done by Baxter Woodman of the A. G. Woodman Company, Grand Rapids, Michigan, and Alan I. Root of The A. I. Root Company, Medina, Ohio, and Lewis Parks of the G. B. Lewis Co., Watertown, Wisc. These men gave much of their time and of their money to attend hearings before the War Production Board not only in regard to bee supplies but also to containers, tires, sugar, and gasoline for the beekeeping industry.

Because of the restrictions on the manufacture of supplies an organization was believed necessary with the following objects:

(1). To keep in constant contact with the War Production Board and other governmental agencies in order to secure for bee supply manufacturers the best possible position in the country's war economy.

(2). To cooperate with other associations and groups within the industry, to better exchange information and further the development of the industry.

(3). To promote as far as practicable the standardization of equipment throughout the industry.

The membership to this association ranges from $10 to $150, payable annually and subject to additional assessments if necessary. Committees have repeatedly gone to Washington to make pleas in behalf of the honey industry and especially in the matter of the limitation of supplies for the beekeeper.

The officers of this association are Alan I. Root, Chairman; R. H. Dadant, Secretary; Baxter Woodman, Treasurer.

Membership open to any manufacturer making bee supplies.

National Honey Association

In the report of the meeting of the "Wartime Beekeeping Conference" appearing on pages 148 to 151, mention is made of the National Honey Association. Some of our readers are not familiar with this association and as it is desirable that producers generally be better acquainted with the various organizations now operating in the beekeeping industry, the following may be of interest.

This association was formed at the national meeting at Niagara Falls in November, 1941. Its objectives as included in the constitution are as follows:

(A). Protect the interests of the honey industry and of the general public by insuring, insofar as is possible through cooperative efforts, the availability of honey at all times.

(B). To obtain, through cooperative effort, favorable transportation and rates for honey containers and bee supplies.

(C). To study such legislation as may be proposed or passed from time to time by various states and other governmental bodies and such rulings as may be made by various branches of state and national governments, and advise the members of the honey industry regarding the probable effects of such legislation upon said industry.

The membership according to the constitution is to be composed of:

"All who believe in and are willing to work for the accomplishment of the above objectives of the National Honey Association and to work in cooperation with other members of the industry in the solution of its problems shall be eligible for membership."

The National Honey Association has financed the expenses of the committee of the National Beekeeping Council which was organized on January 25, 1942, at Chicago. The Washington committee elected at that time was E. F. Phillips, chairman, with Alan I. Root, Walter F. Straub, and James I. Hambleton assisting. This association together with the Bee Industries Association, composed entirely of manufacturers, has done some excellent work in Washington, D. C., contacting both the War Production Board and the OPA in matters concerning and directly affecting the honey industry.

At the present time the association is financing the expenses of the pres-

(Continued on page 181)

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 8 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 10th of month preceding.

HONEY FOR SALE

WILL HAVE more tupelo honey May 20th. Marks Tupelo Honey Co., Appalachicola, Florida.

FOR SALE—50 cases of nice clover section honey, well filled. Make offer. Lose Bros., 206 E. Jefferson, Louisville, Ky.

HONEY FOR SALE—We buy and sell all kinds, any quantity. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York.

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

OUR 68th crop of Michigan clover honey should be ready for the market next July. Oldest producers in Michigan. Write us your needs. E. D. TOWNSEND & SONS, Northstar, Michigan.

HONEY PACKERS—Write us for prices on carload lots of California and Western honey. We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, Calif.

TEMPORARILY sold out of all kinds of honey. Shall have new crop in all-sized containers early in July. Thank you for your order. Shall endeavor to merit your continued patronage. Edward T. Cary, 410 Tallman St. Syracuse, New York.

FOR SALE

FOR SALE—150 ten-frame supers, new combs. Leland Hunt, Oelwein, Iowa.

SELL to best offer 22 three-story hives, A1. John Wharton, Greenville, Texas.

QUEENBEE PAINTING outfits $1.00 postpaid. Southwick Apiaries, Waban, Massachusetts.

FOUR-FRAME Root reversible extractor. Operates like new. Price $35. Willit Smith, Llano, Texas.

FOR SALE—210 comb honey supers, complete, $1.00 each; 420 with equipment, 50 cents each. N. B. Querin, Bellevue, O.

Your wax worked into medium brood foundation for 16c pound; 100 pounds, $12.00; thin super, 22c, Fred Peterson, Alden, Ia.

COMB FOUNDATION at money-saving prices. Wax worked at lowest rates. Comb and cappings rendered. Robinson's Wax Works, Mayville, N. Y.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Michigan.

WAX PRESS, home made, well built, suitable for a beekeeper with a small number of colonies. Does good work, saves wax. Instructions for use furnished. $5.00. Gerald Saur, Ft. Atkinson, Wisc.

GET YOUR DRAWINGS and construction detail NOW for proven tried BRADSHAW DEMOUNTABLE UNCAPPING PRESS. No more headaches, simple to build yourself. Won't rust out, last lifetime. Producers report it greatest improvement fifty years. No heat required, will not darken honey. Adaptable any size outfit. Send $2.00 today for PLANS to Bradshaw & Sons, Wendell, Idaho.

SAVE MONEY by letting us work your wax into wired or regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices, as we have no agents. Walter Kelley Co., Paducah, Kentucky.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE— We cannot guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C. O. D. terms except where the buyer has thoroughly established his credit with the seller.

WE PAY CASH for extracted clover honey. Fair-Field Honey Company, Millersport, Ohio.

HONEY WANTED—State kind, quality, amount. Ellsworth Meineke, Arlington Heights, Ill.

WANTED—White and amber honey; any amount. D. F. Treap, 317 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED—Honey and beeswax. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, Calif.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Kentucky.

CASH PAID for extracted white clover or light amber. Send samples and best price to Honeymoon Products Co., 39 E. Henry St., River Rouge, Mich.

WANTED—Extracted honey in ton lots or more. Send sample and quote price delivered here. C. J. Morrison, 1235 Lincoln Way West, South Bend, Ind.

WANTED—White clover and light amber honey. Any amount. Cash at time of delivery. Clover Blossom Honey Co., 712 Kossuth St., Columbus, Ohio.

HONEY WANTED—Truck or carload lots delivered to Sioux City, Iowa. Write us at Wendell, and submit sample. R. D. BRADSHAW & SONS, Wendell, Idaho.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th St., Detroit, Mich.

WANTED—We pay cash top price for clover honey in 60-lb. tins. Any quantity. Send samples and best prices. Cloverdale Apiaries. F. M. Babcock, Fredonia, N. Y.

WANTED—White and light amber extracted in 60's. Also beeswax. Send samples with best CASH price. We carry complete line of Owens-Illinois new "DURAGLASS" honey containers. Honey and wax accepted in payment. ALEXANDER COMPANY, 819 Reynolds Rd., Rt. 3, Toledo, O.

XUM

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

WANTED--Extracted Honey All Varieties
Send samples and delivered prices to
JEWETT & SHERMAN COMPANY
Cleveland, Kansas City and Brooklyn

WANTED—White and amber extracted honey. Fancy comb, also No. 1 comb honey. Comb honey in shallow extracting frames. Beeswax. We render old comb into wax. Prompt remittance. Write us.
THE FRED W. MUTH CO. CINCINNATI, O.

Three-Banded Italian Bees and Queens

Package bees 2-lbs. with queens, $3.00 each; 3-lbs. with queen, $4.00 each; Select Untested queens, 1 to 25, 90c each; 25 to 50, 80c each; 50 up, 75c each.
Satisfaction Guaranteed, and a health certificate with every order.

ALAMANCE BEE COMPANY
Geo. Elmo Curtis, Mgr.
Graham, North Carolina

NORMAN'S

Package Bees and Queens

1943! and we are back again offering you the Highest Quality 3-Band Italian Bees and Queens. Due to the gasoline and tire rationing please book orders as soon as possible so that we may arrange shipping dates to suit our customers as best we can. DO YOUR PART FOR UNCLE SAM. Will be ready to begin shipping 10th to 15th of April.

	1-24	25-100
Unt. Queens	$ .90	$0.85
2 lb. Pkg. and queen	2.95	2.80
3 lb. Pkg. and queen	3.80	3.60

10% Down books orders. Balance before shipment. State health certificate furnished.

JOHN A. NORMAN
Ramer, Ala. Route 2.

THANK YOU

We are now booked with all the packages and queens we can ship until May 15th. Thanks a million.

WEAVER APIARIES
Navasota, Tex.

BEES AND QUEENS FOR SALE

FOR SALE—Italian Queens. Graydon Bros., Greenville, Ala., Rt. 2.

ITALIAN BEES and Queens for sale at standard prices. Plantersville Apiaries, Plantersville, Miss.

BRIGHT ITALIAN AMERICAN QUEENS. Wintered in strong nuclei, 70c each. D. W. Howell, Shellman, Georgia.

HOLLOPETER'S Italian queens, untested, 80c; tested, $1.50. WHITE PINE BEE FARMS, ROCKTON, PENNA.

CAUCASIANS. Untested queens 90cts. each. 2-lb. pkg., $2.95; 3-lb. pkg., $3.80. Express collect. Safe arrival. Lewis & Tillery Bee Co., Greenville, Ala.

FOR SALE—400 colonies bees, with locations. Bees guaranteed free from disease. Opportunity for package bees. S. E. McClendon, 403 East Clay St., Thomasville, Ga.

PACKAGE BEES AND QUEENS. Hustling Italian stock. Prompt and reliable service. Reasonably priced. Write for circular. Crenshaw County Apiaries, Rutledge, Ala., U. S. A.

THE NORMA ROY APIARIES Italian bees, 2-pound with queen, $2.75; 3-pound with queen, $3.25. Live delivery and a health certificate with shipment. Norma E. Roy & Son, Hessmer, La.

FOR SALE—Certified Italian bees after May 15. Bees, 50c per pound in 500-pounds orders, small orders bees, 60c. Queen with package, 65c. You supply complete shipping cage. A. V. Dowling, Valdosta, Ga.

CAUCASIAN QUEENS in June, 75 cts. Package bees now, 2 lbs., $2.80, and 3 lbs., $3.65. Deduct price of queen for queenless packages. Miller Bros., Rt. 1, Three Rivers, Texas.

MISCELLANEOUS

WANTED—Good used honey pump. Ralph Magers, Augusta, Kans.

WANTED—Electric uncapping knife, also honey pump. F. Karekel, Williams, Iowa.

WANTED—Share basis deal, Iowa preferably. Experienced, 3-A. Roscoe G. Cook. Blair, Nebraska.

WANTED—Truckloads of standard hives and equipment with or without bees. L. Roose, Sac City, Iowa.

WANTED—Bees and beekeeping equipment, 45 or 50 frame extractor. C. W. Schrader, Waterville, N. Y.

WANTED—Old bee books and magazines. Will pay cash for same. Send list to American Bee Journal, Hamilton, Illinois.

MAKE US an offer on 800 used 2 or 3 pound empty package bee cages. Will trade for bees. L. S. GRIGGS & SON, 711 Avon St., Flint, Mich.

WANTED—Large or small lots of bees for cash. In draft cases, etc., will operate bees on shares. Twenty years in business. References furnished. Weldon Bee Farms, Moorhead, Iowa.

WANTED—2-frame reversible extractor with pockets for standard brood frames. State age and condition. George Gampp, 35 Argonne Drive, Kenmore, N. Y.

WANTED 1,000 or more colonies of bees completely equipped, Standard hives, free of disease, located in Southern Minnesota or Northern Iowa. Write Box 17, Gleanings in Bee Culture, Medina, Ohio.

HELP WANTED

WANTED—Helper for Minnesota apiaries. Send description and wages expected. E. E. Salge, Weslaco, Texas.

WANTED—Experienced man to help with bees coming season. Write full details. Ernest Sires, Stanfield, Oregon.

HELP WANTED—$125.00 per month with board for efficient help. Write, care of Gleanings, Box 8, Medina, Ohio.

WANTED—Helper to work with bees. Steady employment. Wonderful future opportunity. William Jacobs, Oakwood, Ohio.

WANTED—Apiary help. Give wages, height, weight, age references in first letter. Good opportunity. Deer Creek Apiaries, Columbus, Ohio.

WANTED—Experienced beeman to start work on or before April 1st. State age and experience when replying. Reuben Neises, 410 S. Pine St., Marshfield, Wis.

WANTED—Experienced queen breeder. Start at once. Also two helpers. Write full information and salary wanted in first letter. H. C. Short, Fitzpatrick, Ala.

WANTED—Experienced man in queen, package, and honey production. Year around work. Give full particulars when replying. Al Winn, Dt. 1, Petaluma, Calif.

WANTED—Man of clean habits for coming season, room and board furnished. Give full qualifications, Wages expected, first letter. B. B. Coggshall & Son, Groton, N. Y.

WANTED—Man, some experience. honey production. Give particulars, references, and wages wanted. Board and room furnished. J. B. & C. J. Merwin, Prattsville, N. Y.

WANTED—Experienced bee-man, married or single; also helper with some experience. Write full particulars including age, experience, wages. Barrett Apiaries, Howell, Michigan.

WANTED — Experienced or inexperienced help. Give age, weight, height, and experience, with wages expected, room and board included. SCHULTZ HONEY FARMS, RIPON, WIS.

WANTED—Experienced men for queen, package, and honey production. All year work. State age, height, weight, and wages expected. Apiaries in northern Minnesota and southern Louisiana. Hopkins Honey Farms, Maringouin, Louisiana.

WISH TO EMPLOY honest reliable helper in commercial apiaries. Must be willing and able to work. Good pay to right man. Experience preferred but not required. State qualifications, age. weight, height. Archie Coggshall, Slaterville Rd., Ithaca, New York.

WANTED—An experienced man in queen-rearing, honey production and honey packing house, year round job. State age, experience, and wages expected. Can furnish house for married man. If using intoxicating drinks, need not apply. J. W. Reitz, Summerfield, Rt. 1, Florida.

MAGAZINES

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly, 7c6d. Apply Editor, Indian Bee Journal, Jeolikote, Dist. Nainital, U. P., India.

READ the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For fur-

Early Shipments!

We Still Have Room For a few hundred packages for shipment to territory where packages are wanted for **MARCH 15th to APRIL 5th.** For prices, see Feb. issue of this publication, and

Write or Wire today.

The Puett Company

Hahira, Ga.

Our price list for 1943 is now ready. Write for your copy. Our service will be the best possible under prevailing conditions. Orders booked and shipped in rotation.

Caucasian Apiaries

Castleberry, Ala.

V . . . —

THREE-BANDED ITALIAN QUEENS

If you are in the market for package bees in 1943, and want the best for your money, then be wise and buy my three-banded Italian Bees. Write for prices.

J. P. CORONA

Box 124 **Kenner, La.**

BUY U. S. WAR BONDS AND STAMPS

Attention!

We Have Completely Booked Our Supply of Package Bees and Queens for Delivery in April and May.

We thank those of you who have pleced your orders early. To those whose orders we could not accept, we are extremely sorry. We had rather return your order than promise that which we cannot do.

No change in price for June.

Rossman & Long

MOULTRIE, GEORGIA

P. O. Box 133

Gleanings Market Place

The following listings are made as a service to our yearly subscribers. (No honey or package bees). All listings must be sent in before the 10th of the month. Transactions are between owner and buyer.

Four 10-frame hives and supers. E. E. Kurtz, 117 W. 46 th St., Ashtabula, O.

Wax Press, home made, well built, suitable for a beekeeper with a small number of colonies. Does good work, saves wax. Instructions for use furnished. $5.00. Gerald Saur, Ft. Atkinson, Wisc.

One Root 4-frame automatic reversible extractor, used very little, $40.00. One heavy gauge galvanized storage tank, about 375 gals., $20.00. Ernest A. Hearn, Salisbury, Maryland.

60 supers with section holders and M fences for 4x5 sections; 16 supers with N section frames and N fences for 4¼x4¾x1⅜ sections; 14 supers with shallow frames and 6 empty supers. All Root goods. Supers are 8-frame width, 5 11/16 deep and in good condition. Price on request. Dr. C. G. Luft, Fremont, Ohio.

50 ten-frame Jumbo hives, double-walled ⅜ cedar with built-in bottoms. These hives are well built and reasonable in price. E. T. Bainard, Byron, Ont., Can.

500 Queen mating hives. Each holds 3 Standard Hoffman Frames, also swasm boxes, cell bars, excluders. Complete outfit. Write for particulars. Gooch Apiaries, Farmersville, Tex.

ther particulars, write to the Hon. Treasurer. P. O. Box 43, Cleveland, Johannesburg, S. Africa.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba Beekeepers' Association, one year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $1.60. Wallingford Building, Winnipeg, Canada.

THE BEEKEEPERS MAGAZINE, published monthly, brings you the News from the field of beekeeping. Subscription: $1. a year. Single copy of current issue, 10c. THE BEEKEEPERS MAGAZINE, 3110 Piper Road, Lansing, Michigan.

MANY BEEKEEPERS have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy. Canada's oldest fur farming magazine telling how. Fur Trade Journal of Canada, Box 31, Toronto, 2, Ontario.

THE BEE WORLD—The leading Journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free, 12 cents stamps. Membership in the Club, including a subscription to the paper 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published, Subscription, $1.50. Hotel Cactus, San Angelo, Texas.

CURRENT SINGLE COPIES—Business, Vocational, Diversion Magazines. Choose from 512 publications, 140 trades, professions, hobbies, live stock, poultry, etc. List with prices free. Commercial Engraving Publishing Company., 34M North Ritter, Indianapolis, Indiana.

SEEDS

KOREAN LESPEDEZA HIGH QUALITY $2.00 bu. Hardy Alfalfa $18.70, Grimm $19.80. New Timothy $2.40. Sweet Clover, Scarified $4.90—Unhulled $2.70. Red Clover $13.80. Clover-Timothy Mixed, $4.50. All Triple Cleaned. Guaranteed Satisfactory. Hybrid Corn $2.25. Write Free Samples—Catalog. Frank Sinn, Box 482, Clarinda, Ia.

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the

"Australasian Beekeeper"

Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office.
Write now to The Editor. P. O. Box 20.
West Maitland New South Wales
Australia

BEEKEEPERS ITEM

Serving the beekeeping industry for a quarter century without bias or prejudice. "The forum for the thoughtful." One year $1.00; two years, $1.50; sample copy, 3c stamp.
With Gleanings it provides a combination that covers the beekeeping field.
Both magazines for one year, $1.75

BEEKEEPERS ITEM
P.O.Box 687 San Antonio, Texas

SELL US YOUR HONEY NOW...AND SAFEGUARD YOUR FUTURE SALES

● Here is an opportunity to establish *permanent* connections with one of America's largest honey merchants. Sell us your honey now, all of it, in carload lots. (Smaller amounts accepted from nearby points.) We pay top ceiling prices. We also want your beeswax. For this we pay $.41½ for clean, pure, yellow wax. All prices effective at shipping points. Send your samples at once. Cans returned in accordance with OPA order No. 275, if desired.

THE JOHN G. PATON COMPANY, INC.
630 Fifth Avenue, New York, N. Y.

QUEENS

Italians **Daughters of Resistant Stock** **Caucasians**

PACKAGE BEES

Prices on Package Bees With Queens to May 21st.

Lots of	Queens	2-lb bees	3-lb.	4-lb.	5-lb.
1 to 24	$.90	$2.95	$3.80	$4.60	$5.35
25 to 99	.85	2.80	3.60	4.35	5.05
100 to 499	.80	2.65	3.40	4.10	4.75
500 up	.75	2.50	3.20	3.85	4.65

For Tested queens, double the price of untested.

BOOKING ORDERS NOW

Over 25 year's experience shipping. Paying 43½ cents a pound for Beeswax in exchange for bees and queens. If you have over 50 pounds, write for shipping instructions. TRUCKERS HEADQUARTERS drive in 3½ miles south of Weslaco on Progresso Highway.

BLUE BONNET APIARIES, Rt. 1, Box 70, Mercedes, Tex.

BUY ROOT STANDARD HIVES

Hives that are correct in measurement. This is most important for the proper handling of bees. There is no excessive amount of burr comb. Root's Famous **Triple Lock Corner Frames** protect the valuable **Three-ply Brood Combs.**

5—10-frame hives with composition covers and frames K. D., $17.50.

ORDER EARLY

A. I. ROOT CO. OF CHICAGO
224 W. HURON ST.
A. I. ROOT CO. OF SYRACUSE
MIDLAND AVE. AND TALLMAN ST.
A. I. ROOT CO. OF INDIANAPOLIS
121 N. ALABAMA ST.
THE A. I. ROOT CO. OF IOWA
COUNCIL BLUFFS, IA.

Root QUALITY BEE SUPPLIES
Ship us your beeswax cash or trade

YORK'S PACKAGE BEES AND QUEENS

QUALITY BRED ITALIANS

This is 1943 and business as usual is out for the duration. Material or supplies rationed or restricted and labor scarce. Our greatest job is to win the war, think of our boys, and serve our country to the very best of our ability. Repair and put into service all idle equipment to increase production. Place your orders early for package bees. Prices for young laying queens and package bees with queens as follows.

Quantity	Queens	2-lb.	3-lb.	4-lb.	5-lb.
1 to 24	$.90	$2.95	$3.80	$4.60	$5.35
25 to 99	.85	2.80	3.60	4.35	5.05
100 to 499	.80	2.65	3.40	4.10	4.75
500 up	.75	2.50	3.20	3.85	4.45

Small queen orders shipped by mail postpaid. Package bees by Express collect. Prices in U. S. funds or equivalent. We are now booking orders. Order direct from this advertisment, save time.

YORK BEE COMPANY

JESUP, GEORGIA, U. S. A.

(The Universal Apiaries)

Three-Band Italian Bees and Queens

Full Weight, Prompt Shipment, Young Bees, State Health Certificate with each shipment. Live arrival guaranteed, replacement or refund made promptly upon receipt of bad order, from your express agent.

2-lb. pkg. bees with untested queens	**each,**	**$2.50**
3-lb. pkg. bees with untested queens	**each,**	**3.25**
4-lb. pkg. bees with untested queens	**each,**	**4.00**
5-lb. pkg. bees with untested queens	**each,**	**4.75**
Untested queens		**.75**
Tested queens		**1.50**

Payable in U. S. funds.

Introduced queen packages, add 25c each; standard combs for nuclei, add 75c for each comb, to the size package quoted above.

JACKSON APIARIES

FUNSTON, GEORGIA, U. S. A.

ARE YOU KEEPING UP . . .

with the latest developments in your field? Here's a group of magazines that specialize in a particular subject! You'll be interested in at least one of these magazines..and you have the assurance that the articles are written by people who know. Send in your subscrption today!

Bee Magazines
- Gleanings in Bee Culture, $1. per year
- Beekeepers' Item, $1.
- American Bee Journal, $1.

Farming
- The Country Book, quarterly, $1.
- American Farm Youth, 75c
- Fletcher's Farming, 50c

Goats
- American Dairy Goat News, $1.
- Goat World, $2.

Livestock
- The Cattleman, $1.
- American Cattle Producer, $1.
- Florida Cattleman, $1.
- National Live Stock Producer, 50c
- Texas Live Stock Journal, $1.
- Eastern Breeder, $2. (8 months $1.)
- Hog Breeder (all breeds) $1.
- American Hamp. (hog) Herdsman, $1.
- Sheep (and Karakul) Breeder, $1.
- The Sheepman, $1.

Pigeons
- American Pigeon Journal, squabfancy, $1.50
- Pigeon News, fancy only, $1.50

Poultry
- Cackle & Crow, the Poultrypaper, $1.
- Pacific Poultryman, 50c
- Florida Poultryman, 50c
- New Hampshire Breeder, quarterly, 3 yrs. $1.
- Bantam Magazine, $1.

Rabbits
- Small Stock, (rabbits, cavies exclusively) $1.
- American Rabbit Journal, $1.

Other Specialties
- Organic Farming, $2. (6 months $1.)
- Dairy Farmers Digest, $1.
- Eastern Fruit Grower, $1.
- The Soybean Digest, $1.50
- New Agriculture (sugar beets only) $2.
- American Fur Breeder, (mink, etc.) $1.
- Small Commercial Animals & Fowls, 50c

All magazines are monthlies unless otherwise noted; prices are for one full year. Satisfaction guaranteed. All orders are handled promptly and acknowledged. Rush your subscriptions today. Remit in any way convenient to you.

MAGAZINE MART

Dept. GB LaGrange, Ill.

Sample copies at single copy prices.

MUTH'S WAX RENDERING DEPARTMENT IS ALWAYS BUSY

Our steam wax presses do perfect work rendering all the wax from the comb and cappings . . . Thousands of beekeepers from all over the nation send their combs to MUTH for rendering . . .

THE FRED. W. MUTH CO.

Pearl and Walnut Cincinnati, Ohio

Sullivan's Apiaries

Established 1931; Sullivan's Apiaries to 1938; Sullivan, Wright & Co., 1938 to 1942. Now, Sullivan's Apiaries.

Price.	Queens	2-lb.	3-lb.
1 to 24	.90	$2.95	$3.80
25 to 100	.85	2.80	3.60

Prompt, honest, courteous, and dependable service.

SULLIVAN'S APIARIES
Gilbertown, Ala.

Quality Bred Three-Banded Italians

BEES AND QUEENS

Customers with life time experience in rearing queens and shipping package bees. You can't find any one who will serve you better than I can. So let me book your order now.

Prices on Queens and Package Bees with Queens.

Lots of	Queens	2 lb. Pkgs.	3 lb. Pkgs.
1 to 24	$0.85	$2.80	$3.75
25 to 49	.80	2.60	3.60
50 to 500	.75	2.50	3.50

Farris Homan

Shannon, Miss.

PACKAGE BEES and QUEENS

Gentle three-band Italians that have stood the test for 20 years, and made me a host of friends. They will do as much for you.

In addition to above strain I will be able to furnish a limited number of packages headed with daughters of queens breed for resistance to A.F.B.

As I have never had any disease in my bees I cannot attest to their resistance to A.F.B. But am breeding from daughters of queens bred for resistance. They are a bit harder to handle than Italians, but from a honey making standpoint, I don't think they can be excelled.

— Prices either strain —

	Queens	2-lb. with queen	3-lb. with queen	4-lb. with queen
1- 24	$0.90	$2.95	$3.80	$4.60
25- 99	.85	2.80	3.60	4.35
100-499	.80	2.65	3.40	4.10
500-up	.75	2.50	3.20	3.85

Place your order early and avoid delay.

A. E. SHAW Shannon, Miss.

PACKAGE BEES QUEENS

ITALIAN CAUCASIAN

PRICES To May 20th

Lots of:	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1 to 24	$0.90	$2.95	$3.80	$4.60	$5.35
25 to 99	.85	2.80	3.60	4.35	5.05
100 to 499	.80	2.65	3.40	4.10	4.75

(Queenless Packages - Deduct Price of Queen)

Book your order now. All indications point to a heavy demand for packages and queens the coming season. We are making every effort possible to produce at least as many packages and queens as last season, but please help us as much as possible by placing your order as early as you can. You have the privilege of reducing or cancelling at any time before the bees are shipped.

— ORDERS BOOKED WITHOUT DEPOSIT —

To Our Bee Supply Customers:

We are sorry to announce that due to difficulty in obtaining materials, and our desire to operate our bees to capacity, we are forced to discontinue the manufacture of bee supplies for the present. However, we still have a few supplies and a fair assortment of foundation on hand, at 1942 catalog prices as long as they last.

THE STOVER APIARIES

MAYHEW, MISS.

Gaspard's Quality Italian Package Bees & Queens

We urge you to book your order early, save the rush, and reserve shipping date, only 20% will book your order. Balance at shipping time. Prices as follows:

(Combless Packages with queens)

Lots of	Queens	2-lb. Pkg.	3-lb. Pkg.	4-lb. Pkg.	5-lb. Pkg.
1 to 9	$0.95	$2.90	$3.75	$4.55	$5.25
10 to 24	.90	2.75	3.55	4.30	5.00
25 to 49	.85	2.65	3.40	4.10	4.75
50 to 99	.80	2.55	3.30	4.05	4.70
100 or more	.75	2.50	3.25	4.00	4.65

(Comb packages with one Standard frame of brood, with queen)

Lots of	2-lb. Pkg.	3-lb. Pkg.	4-lb. Pkg.	5-lb. Pkg.
1 to 9	$3.50	$4.35	$5.15	$5.85
10 to 24	3.35	4.15	4.90	5.60
25 to 49	3.25	4.00	4.70	5.35
50 to 99	3.15	3.90	4.65	5.30
100 or more	3.10	3.85	4.60	5.25

Safe live delivery guarantee, and a health certificate with each shipment.

J. L. GASPARD - Hessmer, La.

Package Bees & Queens

Our Progeny-Test Stock Will Give Results. Book orders now

Quantity	Queens	2-lb. Pkgs.	3-lb. Pkgs.
1-24	90c	$2.95	$3.80
25-99	85c	2.80	3.60
100-up	80c	2.65	3.40

BESSONET BEE COMPANY, Donaldsonville, La.

Buy U. S. War Bonds and Stamps

This photo shows a portion of one of our queen yards, containing over 6,000 nuceli.

ITALIAN BEES AND QUEENS

2-lb pkg. with qns., $3.00; 3-lb. pkg. with qns., $4.00. Extra qns., $1.00.

OVERBEY APIARIES - Bunkie, Louisiana

WAR-TIME BEEKEEPING CONFERENCE

(Continued from page 151)

tions must be supported by unanimous vote.

The membership of the committee (the **Council** Board) now is:

E. G. Brown, Chairman, Iowa.
W. E. Anderson, Vice-chairman, Louisiana.
E. B. Everitt, Treasurer, and Acting Secretary, Pennsylvania,
O. H. Schmidt, Michigan.
L. M. White, Oregon. (These five men elected by the **National Federation of State Beekeepers' Associations.**)
Roy Grout, Illinois.
Alan Root, Ohio. (These two men elected by the **Bee Industries' Associations.**)
R. F. Remer, Iowa.
J. G. Paton, New York. (These two men elected by the **National Honey Association.**)

The present Acting Secretary would call attention to one point: Manufacturers and packers have stable and efficient organizations already at work. The state beekeepers' associations can do no better than to contact Mr. H. J. Rahmlow, of Madison, Wis., at once so that they can act with equal efficiency. A chain is no stronger than its weakest link.—E. B. Everitt, Allentown, Pennsylvania. (See page 164.)

• • •

NATIONAL HONEY ASSOCIATION

(Continued from page 172)

ent committee of the Beekeeping War Council, pending the full organization of the National Federation of State Beekeepers' Associations. This will give the latter organization time to raise the funds necessary to carry on its program.

At the present time the officers of the National Honey Association are L. C. Dadant, President; T. W. Burleson, First Vice-President; R. F. Remer, Second Vice-President; Alan Root, Treasurer; Lewis W. Parks, Executive Secretary; John Paton, Chairman of Board of Directors.

GASOLINE RATIONING AS IT AFFECTS BEEKEEPERS

(Continued from page 163)

to the agricultural portion of the truck operations.

Operators of trucks which do not have a gallonage large enough to continue essential operations may secure a card from their County Farm Transportation Committee which, when presented to their local War Price and Rationing Boards, will entitle them to a 30-day temporary transport ration and give them sufficient time to make an appeal for an adjusted Certificate of War Necessity.

[The definition of terms, such as "farm vehicle", "farm", etc., have been omitted, due to lack of space.—Ed.]

1943 Prices

Italian Package Bees with queens, 2 lbs., and queen, $2.75 each. 3 lbs., and queen, $3.45 each. 4 lbs., and queen, $4.15 each. 15% down books order. Health certificate, full weight, safe delivery guaranteed. Address

HESSMER BEE FARM
Hessmer, La.

HONEY WANTED

Carloads and less - all grades - send samples, state quantity and delivered price.

Honey Sales Co., Minneapolis, Minn.
1808 No. Washington Ave.
Send for container price list

CANADIAN BEE JOURNAL

Published monthly for the beekeepers of Canada. Covers its field thoroughly. U. S. subscription price $1.25 per year. To keep in touch with the trade in Canada, subscribe now.

LAKESIDE PUBLICATIONS
OSHAWA, ONTARIO

BUY U. S. WAR BONDS AND STAMPS

Package Bees! :-: Queens!

Three-Band Italians

The foundation of our business is Good Stock, Good Weight, and Good Service.

We are prepared to handle your orders.

Prices to May 20th

Lots of	Queens	2 lb.	3 lb.	4 lb.	5 lb.
1 - 24	$ .90	$2.95	$3.80	$4.60	$5.35
25 - 99	.85	2.80	3.60	4.35	5.05
100 up	.80	2.65	3.40	4.10	4.75

(Queenless Packages—Deduct price of Queens)

CITRONELLE BEE CO., Citronelle, Ala.

BETTER - BRED QUEENS

THREE - BANDED ITALIANS

What counts in package bees?

Good queens. Young bees. Prompt shipment. Business responsibility.

Our years of experience, together with many satisfied customers, have proven that we are able to fulfill above requirements.

	queens	2 lb.	3 lb.	4 lb.	5 lb.
1 to 24	$ .90	$2.95	$3.80	$4.60	$5.35
25 to 99	.85	2.80	3.60	4.35	5.05
100 to 499	.80	2.65	3.40	4.10	4.75
500 up	.75	2.50	3.20	3.85	4.45

CALVERT APIARIES, CALVERT, ALABAMA

1943 | Package Bees and Queens | 1943

YES, WE HAVE THEM **Bright 3-Banded Italian** **THE BEST KIND YOU CAN BUY**

— — — YOU CAN COUNT ON US — — —

We will do our utmost part to ship the day you specify. SUPERIOR QUALITY—FULL WEIGHT—LIGHT SHIPPING CAGES—YOUNG BABY BEES—CHOICE QUEENS. Safe arrival and satisfaction guaranteed in U. S. A. and Canada, state health certificate furnished.

Prices to May 21st

	1 to 24 each	25 to 99 each
2-lb. Pkg. with queen,	$2.95	$2.80
3-lb. Pkg. with queen,	3.80	3.60
Untested queens,	.90	.85

Packages F. O. B. express. If by parcel-post, add 10c per package, plus postage. Each additional pound bees, 80c.

NORMAN BROS. APIARIES, Ramer, Ala.

Italians or Caucasians

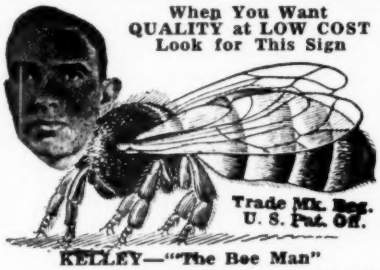
Over a quarter of a century in the same place in the same business.

	1-to 5	6 or more
2-lb. package with young queen	**$3.00 each**	**$2.75 each**
3-lb. package with young queen	**3.80 each**	**3.60 each**

My motto: I will expect to do business with you again.

H. E. GRAHAM - - - - - Cameron, Texas

Buy U. S. War Bonds and Stamps



RUSH

Buy Supplies NOW

Send us a List of Your Needs

The Walter T. Kelley Co., Paducah, Ky.

Manufacturers of Bee Supplies

the Hubbard APIARIES

WRITE FOR FREE CATALOG

Quality Bee Supplies Factory Store Prices

Prompt Shipment from Stock

Satisfaction Guaranteed

THE HUBBARD APIARIES

Manufacturers of Bee Supplies

ONSTED, MICHIGAN

Send your cappings and old comb to MUTH for rendering into beeswax.

THE FRED. W. MUTH CO. Pearl and Walnut Cincinnati, Ohio

One Year's Subscription FREE

Hundreds of new beekeepers have started this year. Their success is important. **"Talks to Beekeepers"** in Gleanings in Bee Culture will help them.

Mail Us:

3 One-year Subscriptions

or

2 Two-year Subscriptions

(At the Regular Rates)

And we will enter your subscription FREE for one year.

Mail to Circulation Manager

GLEANINGS IN BEE CULTURE

Medina, Ohio

HERIER'S
SELECT - ITALIAN
Package Bees - Queens.

From
Stock Producing Maximum Crops.

Large Vigorous Queens.

Young Bees - No Drones.

Comb and Chunk Honey Builders.

Fast Evening Express North.

Safe Arrival—Satisfaction.

A Select Young Queen In Each Pkg.

	2 lb.	3 lb.	4 lb.	Queens
1- 24	$2.95	$3.85	$4.75	90c
24- 99	2.80	3.65	4.50	85c
100-249	2.65	3.45	4.25	80c
250—	2.50	3.25	4.00	75c

IN U. S. FUNDS

High Quality — Prompt Service

R. B. HERIER CO.

Valdosta, Ga. U. S. A.

HELLO, FOLKS!

Here We Are Again!

Stevenson's Line-bred Goldens

To tell you that we are the best honey producers; so gentle and quiet it is a real pleasure to work with us; are easy to requeen; do not swarm until the hive is well filled.

We are really GOOD.

	Queens	2-lb.	3-lb.	4-lb.
1 to 24	$ .90	$2.95	$3.80	$4.60
25 to 99	.85	2.80	3.60	4.35
100 up	.80	2.65	3.40	4.10

If interested write,

STEVENSON'S APIARIES

Westwego, La.

DISPLAY ADVERTISERS' INDEX

Aeppler Co., C. W. 174
Alabama Apiaries 188
Alamance Bee Co. 174
American Red Cross . . . Outside back
Beck, M. 186
Beekeepers Item 176
Bernell, R. L. 191
Bessonet Bee Co. 180
Blue Bonnet Apiaries 177
Bolling Bee Co. 187
Calvert Apiaries 182
Caucasian Apiaries 175
Citronelle Bee Co. 182
Clover Bee Farm 190
Corona, J. P. 175
Dadant & Sons . . Inside Front Cover
Dixieland Apiaries 190
Ephardt's Honey Farms 185
Garon Bee Co. 190
Gaspard, J. L. 180
Graham, H. E. 182
Hann, Albert G. 187
Herier Co., R. B. 184
Hessmer Bee Farm 182
Homan Bros. 187
Homan, Farris 179
Holder Apiaries 188
Honey Sales Co. 181
Hubbard Apiaries 183
Jackson, D. C. 178
Jewett & Sherman Co. 174
Kelley Co., The Walter T. 183
Lotz Co., August 186
Muth Co., The Fred W. 174, 179, 183
Norman Bee Co. 184
Norman Bros. Apiaries 182
Norman, John A. 174
Overbey Apiaries 181
Paton Co., The John G. 177
Pettit, Morley 191
Puett Co. 175
Rossman & Long 176
Schmidt & Sons, Oscar H. 185
Shaw, A E. 179
Stevenson's Apiaries 184
Stover Apiaries 180
Sullivan's Apiaries 179
Walker, Eugene 187
Weaver Apiaries 174
Woodman Co., A. G. 185
York Bee Co. 178

Bees and Queens - Honey and Wax

are not made by promises. It takes real packages of bees and queens We have them. Order early before all the best dates are taken up. Bright Italian bees and queens. Packages by express F. O. B., queens by parcel post. No disease. Safe arrival and satisfaction guaranteed.

Lots of	Queens	2-lb. Pkgs. with queens	3-lb. Pkgs. with queens	4-lb. Pkgs. with queens
1 - 24	$ .90	$2.95	$3.80	$4.60
25 - 99	.85	2.80	3.60	4.35

Norman Bee Company, Ramer, Ala., Box 193

MAKING PACKAGES PRODUCE

(Continued from page 136)

opening will conserve heat and tend to keep robbers out. For the first few days, at least, the entrance should usually be reduced to an opening not much larger than will afford one bee a passageway. Since early spring winds are even more a hazard to packages than to colonies of full strength, the beekeeper should protect his packages from wind and cold. There are many ways of providing this protection.

The Giving of Brood is a Great Stimulus

In a locality where average flows of nectar prevail, a small package of one, two, or three pounds—even if installed early—will seldom produce a surplus above its own winter needs. It can be made to do so by boosting it with contributions of brood from other colonies at the right time. Almost any well established bee yard includes colonies that will not suffer in production by contributing a frame of brood. In fact, such a contribution may help to prevent their overcrowding themselves. The package, on the other hand, will virtually grow by leaps and bounds as a result of such additions. Ordinarily, the giving of three full frames of brood will accomplish the purpose of transforming a nondescript package into a paying unit. Such brood should be in the capped stage and given at a season when the weather is warm enough so the numerically weak package can afford to feed and shelter its acquisition. Food, too, must be available. If frames of brood are added at intervals of a few days, the package can adapt its work to the task more safely and more successfully.

If all these factors are taken into account, a small package of one, two, or three pounds of bees can be promoted into becoming a profit-giving colony in the same season in which it is started.

Saugerties, N. Y.

For About 75 Years

The Bee Smoker has been the most important tool in the outstanding development of American Beekeeping. It has made large quantity, commercial honey production possible. Little can be accomplished without the Bee Smoker.
In this time of scarcity and restricted supply of materials, conserve such items as Smokers, Extractors and other items made of metal. Thus spread their use over time and place

A. G. Woodman Company
Grand Rapids, Michigan, U. S. A.

NOTICE

Write for prices for having your wax made up or outright purchase of

SCHMIDT'S Economy Foundation

Not excelled for quality, strength and workmanship

Satisfaction Unconditionally Guaranteed

Oscar H. Schmidt & Sons
Rt. 4 Bay City, Mich.

CARNIOLANS

CARNIOLANS BUILD UP early in the spring and are the most excellent workers. Carniolans lead in honey production, in economic use of winter stores and in gentleness. Make it Carniolans in 1943.
Price:
2-lb. bees with queen, $3.00; 3-lb. bees with queen, $4.00, FOB. Untested Queens, $1.00 Postpaid.

EPHARDT'S HONEY FARMS, PLAUCHEVILLE, LA.

Buy Lotz Sections

and

Solve Your Packaging Problems

• • •

1943 is a year of problems for the Beekeeper. Sugar rationing has created a demand for honey.

Conservation Order M-81 issued by the War Production Board has banned the manufacture of tin containers less than 5-gallon size and limited the manufacture of caps for glass containers.

Produce comb honey. It furnishes its own containers.

Lotz sections will give your comb honey a boost. They will save you valuable time because they will not break when being folded. Less breakage means lower cost. And, too, the smooth, white appearance of the surrounding section adds sales appeal.

• • •

August Lotz Company

Boyd, Wisconsin

Root QUALITY BEE SUPPLIES

We plan to give you the best service possible under present day conditions. Mail your order as soon as you can and we will advise what kind of delivery we can make.

• • •

For Prompt Service
Write

M. BECK

510 N. Cedar St., Lansing, Mich.

SHIP YOUR BEESWAX
CASH OR TRADE

NEW INFORMATION ON HONEY

(Continued from page 139)

drate than were observed when corn syrup was added."

The carbohydrates which we eat are burned by our bodies. For this purpose, as for the burning of a candle, oxygen is needed. The air which we breathe contains oxygen. The latter is taken by the blood, especially by the red pigment—hemoglobin—of the red blood cells. Hemoglobin is important because it is a carrier of oxygen to the tiniest portions of our organism. Without enough oxygen the living processes of our bodies can not go right and this brings various undesirable complications. The body can not build the hemoglobin if there is not enough iron in the food. Besides iron, the presence of minute amounts of copper, acting as a kind of stimulant, is necessary to effect the normal formation of hemoglobin.

Honey contains small amounts of both iron and copper. Unfortunately, there have been no records of controlled experiments of the role of honey in hemoglobin formation. However, there are some indications that honey can contribute to the increase of the hemoglobin content of blood. Emrich in Europe selected six groups of children who were similar as to type, age, constitution, and hemoglobin content of blood and who came mostly from the same family or from families with similar living conditions. There were two children in each group of which one received honey and milk, the other milk only in addition to their normal diet. The results showed that those receiving honey had greater increase in hemoglobin than those who did not receive this supplement. Rolleder, another European investigator, selected 29 pairs of boys, the individuals of each pair being as far as possible similar in weight, stature, and the hemoglobin content of the blood. One boy of each pair received two tablespoonfuls of honey daily for six weeks in addition to the normal diet. The other boy did not (controls). At the end of a six-week period, there was a marked tendency for the blood of the boys who had honey in their diet to show an increase in hemoglobin content. Two-thirds of them showed an average increase of 8.5 per cent; two-thirds of the boys who did not have honey showed a marked fall

(Continued on next page)

(Continued from previous page)

in hemoglodin content of their blood. Presumably the remaining third in each case showed little change. A second test in which the controls were the experimental children and vice versa confirmed these results. In both cases there was no specification as to the kind of honey that was fed to the children.

It has been found that if a young growing animal is placed on a diet consisting of milk alone it becomes anemic after a relatively short period of time because not enough iron is consumed with the food to maintain the normal formation of hemoglobin. Such type of anemia is called nutritional anemia because it is a result of faulty nutrition. A three weeks old rat has about 11 grams of hemoglobin in every 100 cc. (cubic centimeters) of blood (one-third of an ounce of hemoglobin to three ounces of blood). In 4 to 5 weeks on a whole milk diet the amount of hemoglobin in the blood of such a rat decreases to 5 and even less grams in 100 cc. of blood. If iron and copper are fed with the milk, the hemoglobin does not fall but increases up to a certain level. If iron and copper are added to the milk fed to anemic rats—the amount of hemoglobin rises to the normal.

In cooperation with Dr. Leroy Palmer of the Division of Biochemistry, University of Minnesota, we have conducted a series of controlled experiments on the value of honey in prevention and cure of nutritional anemia in rats (Haydak, Palmer and Tanquary, 1942). One hundred and sixty rats were used in the experiment. Because honeys differ in their iron and copper content, dark honeys being richer in those minerals, buckwheat honey, as a representative of the dark type and sweet clover and basswood honey as a representative of the light type were used.

We fed young rats with whole milk to which 20 per cent of honey was added. Equivalent amounts of beet sugar (sucrose) was fed to the control rats. After 10 weeks on such a diet, the hemoglobin of the blood of the rats fed dark honey increased from 10.8 grams to 11.4 grams, that of the rats fed light honey decreased from 10.6 to 4.6 grams and sucrose fed to rats had their hemoglobin as low as 3.6 grams per 100 cubic centimenters of blood. However, the rats offered a milk—dark honey mixture

(Continued on page 190)

Package Bees and Queens

Caucasians Only

Standard for gentleness, Dependable for honey gathering

Prices with queens in each package

	Twos each	Threes each	Extra Queens each
1 to 49	$3.25	$4.00	$ .95
50 to 99	3.10	3.85	.90
100 and more	2.95	3.70	.85

Package bees via. express collect. Book your orders early. We will do our best to please you.

BOLLING BEE CO.

Bolling, Ala.

Carniolans

Caucasians

Can supply a limited number of package bees of these races.

2-lb. Package with queen	$2.95
3-lb. Package with queen	3.80
8-fr. Colony, tested (1942) queen	10.00
10-fr. Colony, tested (1942) queen	12.00

Both races are prolific, build up fine, very gentle, wonderful workers. Carniolans swarm somewhat more than Italians or Caucasians some seasons.

Albert G. Hann, Glen Gardner

New Jersey

Why not book your orders now for Homan's 3-banded Italian Bees and queens.

2 lb. Pkgs. with queen.
1 to 24 ....$2.85 25 to 49 ....$2.60
50 to 499....$2.50

3 lb. Pkgs. with queen each.
1 to 24 ....$3.75 25 to 49 ....$3.60
50 to 499 ....$3.50

Queens.
1 to 24 ....$ .85 25 to 49 ....$ .80
50 to 499 ....$ .75

HOMAN BROS.
SHANNON, MISS.

Package Bees and Queens

EUGENE WALKER

357 Indiana St.
GRIDLEY, CALIF.

BUY U. S. WAR BONDS AND STAMPS

The Monthly Honey Market

TOO LATE TO CLASSIFY

6 BASSWOOD SEEDLINGS, 18 inches or 6 Morrowii Honeysuckle shrubs, 18 inch, postpaid for $1.00 bill. We specialize in nectar and pollen producing nursery stock. Free circular, also of our new "Combined Controlable Feeder and Swarm Control Board" postpaid for $1.75. A local Lewis-Dadant dealer. NICOLLET COUNTY NURSERY, St. Peter, Minn.

WANTED—Helper for season. Give description and wages expected. Must be strong and willing. Board and room furnished. Norman Ellis, Caro, Mich., Route 4.

FOR SALE—350 empty ten-frame hives with metal covers and cypress bottom boards, have been painted from once to five times. One supply tank, 150 gal. capacity, One Root power uncapping machine; accumulation of 50 years of comb and extracting equipment, feeders, and thousands miscellaneous things. Earl L. Baker, Lake City, Mich.

WANTED—Experienced beekeeper for season. Give full particulars of yourself, including experience and wages wanted with board, room, and laundry. Leland Farnsworth, Davison, Mich.

WANTED—Man to work in bees. Must have some experience. Good future opportunity for right man. R. D. Bradshaw & Sons, Wendell, Idaho.

WANTED—Bees, used standard equipment. Four-frame extractor. Martin Pochedly, 135 Gould, Bedford, Ohio.

WANTED—Honey pump, Brand capping melter and boiler. Hodson's Honey Farms, Amboy, Indiana.

WANTED—White or light amber honey in 60s. Send sample and best price. BABEE BRAND FOODS, 740 North Washington, Minneapolis, Minnesota.

FOR SALE—169 swarms of bees, certificate of inspection furnished at time of sale, complete equipment, good location, six acres good land, 8 room house with all modern equipment. Write for full details to, W. G. Stevens, Custer, Mason County, Michigan.

WANTED—Man, some experience, honey production. Give particulars, references, and wages wanted. Board and room furnished. J.B. & C.J. Merwin, Prattsville, N. Y.

U. S. GOVERNMENT REPORT

Information from Producing Areas (Last half of January)

CALIFORNIA POINTS

Southern California. Heavy frosts during the early part of this period with considerable heavy desert wind were followed by heavy rains over much of Southern California. While it is felt that this rain fall greatly benefited honey plants experience has shown that a good sage flow can seldom be expected when rains start so late. Many beekeepers are extremely pessimistic over the honey prospects for the 1943 season. In the hills bees ramained fairly inactive, while in the valleys they are working on cover crops, gum and are making some gain from eucalyptus. Bees have been flying almost daily during this winter.

SUMMARY

Except for the southern States extremely cold weather hit nearly all sections of the country, with some points reporting the lowest temperatures in recent years. Heavy snow fell over much of the Pacific Northwest and most of the northern States are still blanketed under considerable snow. Heavy frosts hit southward into the central and western Gulf Coast region and also into Southern California. Rains in Southern California and Arizona partially relieved drought conditions which have prevailed for several months. However, considerably more rain is needed in this sec-

A GOOD RULE TO GO BY

Buy your bees and queens from

ALABAMA APIARIES

MOUNT PLEASANT, ALABAMA

We are in business to serve beekeepers.

Our Aim—

Once a Customer, Always a Customer.

PLACE YOUR ORDER NOW FOR DEFINITE SHIPPING DATE!

Early orders are being placed more rapidly this year than at any time in the past. Delivery at the proper time is of such great importance that to take a chance with late ordering may decrease your honey crop. Your order placed in advance will insure your receiving your bees when you want them. Our efficient system of booking prevents any possibility of late shipment.

Three-banded Italian Queens and Bees. Prices through May 20, 1943.

Quantity	Queens	2-lb. pkg. With queen	3-lb. pkg. With queen	4-lb. pkg. With queen
1 - 24	$0.90	$2.95	$3.85	$4.60
25 - 99	.85	2.80	3.65	4.35
100 - 499	.80	2.65	3.45	4.10

BEST YOUNG QUEENS — ALL NEW CAGES — GUARANTEED LIVE DELIVERY

HOLDER APIARIES

65 St. Francis St. **P. O. Box 1101**

MOBILE, ALABAMA

tion and it is felt that these rains may be too late to benefit many early honey-producing plants. Except in the far Southeast and far Southwest moisture conditions are considered good and honey plants now appear in favorable condition for next season. In the Plains Area some concern is being expressed over lighter plantings of sweetclover and some acreage now in sweetclover being given over to other crops. While the extent of colony losses in those sections of the country hit by the extreme cold weather and heavy snows is still problematical, for the country as a whole bees seem to be wintering fairly well with no abnormal losses except in small areas. Since food stores were light last fall considerable feeding is anticipated in many sections. However, with the long cold winter consumption of stores in many States has been below normal.

Just what expansion or contraction will be made in beekeeping operations this season is still problematical. Southern package bee producers report much heavier orders than usual for this season. On the other hand many beekeepers feel that labor shortages and difficulty in obtaining supplies will limit expansion. Some concern is being expressed over the possibility of obtaining sufficient sixty pound cans to handle a larger than normal production this season.

Estimates indicate that probably less than ten percent of the 1942 honey crop remains in producers hands. Very few carlots were sold during this period, and the number of sales of small lots is becoming increasingly scarce. Demand continues far in excess of available supplies. However, many bottlers and wholesalers feel that until rationing of supplies they will be able to make their present stock last until 1943 honey comes in. Practically all sales of honey are at ceiling levels reguardless of flavor or color. Demand for beeswax continues in excess of supplies, with practically all sales reported at ceiling levels.

Monthly Report of Honey Producers

Early in February we sent the following questions to honey producers: 1. Do you expect the remainder of the 1942 honey crop to be cleaned up before any of the 1943 crop is ready for market? If any will be held over, what per cent of the crop do you think it will be? 2. At what price has honey been sold or contracted for, if any, in large lots, (carload or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 4. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 6. What is the present condition of the honey plants for next season in your locality as compared with the average? Give answer in per cent. 7. What is the present condition of the colonies, as compared with normal, considering the number and age of the bees and the supply of stores? Give answer in per cent. The answers received are tabulated as follows:

		1.	2.		3.		4.		5.	6.	7.
Date Rec.		1942 Carry-	Large Lots		To Grocers		To Consumers		Move-	Cond. of honey	Cond. of colo-
Feb.	State Name	-over	Ex.	Comb	Ex.	Comb	Ex.	Comb	ment	plant	nies
8	S-Ala. (J. C. Dickman)	0			.60	4.80	.75	.25	Fair	100	100
15	B.C. (A. W. Finlay)		.15		.87	5.50	1.10	.30	Rapid	100	100
9	S-Calif. (L. L. Andrews)	0	.12				1.08	.28	Rapid	70	75
15	C-Calif. (Davis Bros.)	0	.12				1.05		Rapid	100	100
11	SE-Colo. (Otis E. Adcock)	0	.11				.95	0	Rapid	100	100
8	E-Conn. (Allen Latham)	0	.10		.75	5.00	1.00	.30	Rapid	100	100
18	S-Fla. (C. C. Cook)		.10		.70		.95		Rapid	100	100
11	SE-Ga. (J. J. Wilder)	0	.10	.12½*	.70	.75*	.85	1.00*	Rapid	100	100
10	NC-Ills. (A. L. Kildow)	0				3.00	.75	.18	Slow	125	75
4	S-Ills. (Carl E. Killion)	0	.12	3.00		3.00	.75	.17	Fair	100	80
8	NC-Ind. (T. C. Johnson)	0			.70	4.80	.85	.25	Rapid	100	
5	NW-Ind. (E. S. Miller)	0			.80		.95	.25	Fair	100	95
11	W-Iowa (E. G. Brown)	0			.85		1.25		Rapid	100	100
11	C-Md. (S. G. Crocker, Jr.)	0							Rapid	75	75
10	N-Mich. (Ira D. Bartlett)	0	.12		.85		1.00		Rapid	100	100
8	E-Mich. (L. S. Griggs)	0	.12				1.00	.20	Rapid	100	80
10	S-Mich. (Floyd Markham)	0	.12		.88		1.20		Rapid	100	90
5	C-Mich. (E. D. Townsend)	0								110	90
11	W-Minn. (B. L. Morehouse)	0	.12		.85		1.00		Rapid	110	100
6	S-Minn. (J. F. Garner)	0	.12	3.60	.75	4.00	.90	.20	Rapid	100	100
9	W-Nev. (Geo. G. Schweis)	0			.75	4.50	.90	.25	Fair	100	75
15	W-N.M. (C. A. Baltzley)	0			.70	6.25	.83	.35	Fair	80	90
9	W-N.Y. (Adams & Myers)	0				6.00	1.25	.35		100	100
8	NW-N.Y. (Geo. B. Howe)	0			.75		.93	.25	Rapid	100	100
4	C-N.Y. (F. W. Lesser)	0	.14						Slow	100	90
3	C-Ohio (R. D. Hiatt)	0	.12		.85		1.15		Rapid	100	90
8	NC-Okla. (C. F. Stiles)	0			.65		.97	.20	Fair	100	90
10	C-Penn. (Harry Beaver)	0			.70		.85		Fair		90
11	SE-Penn. (D. C. Gilham)	5	.12		.85	4.25	1.15	.25	Rapid	100	100
8	C-Tenn. (J. M. Buchanan)	0					1.25		Slow	100	90
11	E-Tenn. (W. L. Walling)	0					1.25		Fair	90	90
8	C-Texas (T. A. Bowden)	0			.60		.75		Rapid	75	75
8	S-Texas (J. N. Mayes)	0			.60				Rapid		70
9	S-Texas (H. B. Parks)	0					.65		Fair	100	100
11	W-Utah (Wm. Moran)						1.00		Fair	100	90
15	S-Va. (T. C. Asher)				.70	4.00	.95		Fair	90	95
10	W-W.Va. (W. C. Griffith)	0					1.25		Slow	80	50
8	N-Wis. (N. E. France)		.12		.55		.60		Slow		80
9	N-Wyo. (Earl C. Reed)				.75		.89		Fair	90	100

* Chunk honey

DIXIELAND'S LEATHER COLORED ITALIANS

A strain of bees that has been selected and tested over a number of years for all of the best qualities that are necessary for producing honey. We have received proof, and you will also receive proof that they have all of these good qualities of producing honey when you try them.

	Queens	2-lb.	3-lb.	4-lb.
1- 24	.90	$2.95	$3.80	$4.60
25- 99	.85	2.80	3.60	4.35
100-499	.80	2.65	3.40	4.10
500-up	.75	2.50	3.20	3.85

Due to war time conditions orders must be placed early as possible to receive prompt delivery.

You must be satisfied!

Dixieland Apiaries

Greenville, Alabama

ITALIAN BEES AND QUEENS

2 lbs. Bees with young queen, ... $2.75
3 " " " " " 3.45
4 " " " " " 4.15
5 " " " " " 4.75

Booster packages, deduct 75c ea.

Satisfaction guaranteed, 20% deposit on booking orders.

THE CLOVER BEE FARM
Hessmer, La.

NEW INFORMATION ON HONEY

(Continued from page 187)

were consuming more food than those fed light honey and sucrose as an addition to their diet. In order to compare these diets in an exact way it was necessary to restrict each rat in the dark honey group to the amount consumed by the rats fed light honey or sucrose. After this was done the results were as follows: in 15 weeks the hemoglobin in the blood of the rats receiving dark honey supplement rose from 10.5 grams to 11.0 grams, that of the rats receiving light honey fell by the tenth week to about 4 grams per 100 cubic centimeters of blood and remained at that level to the end of the experiment. The hemoglobin content of the blood of the control animals receiving sucrose supplement fell steadily reaching the level of 2.9 grams per 100 cc. of blood.

When the hemoglobin content of the blood of young rats was reduced by a whole milk diet to 6 or 4 grams per 100 cc. level, the addition of 20 per cent dark honey to the milk caused a gradual increase in the hemoglobin while the addition of 20 per cent light honey permitted a gradual further decline in the hemoglobin until a level of about 3 grams per 100 cc. was reached.

It was concluded that the dark honey can play a role in the prevention and cure of nutritional anemia in rats while light honey is less effective as a source of the blood-forming elements.

BUY U. S. WAR BONDS AND STAMPS

Package Bees and Queens

We are entering our 6th year of our Famous Progeny-Test Method of Queen Breeding and our 4th year Breeding of Daughters of Stock Bred for Resistance to A. F. B.

We are fully booked for April packages. Send your orders for MAY shipment and best available dates will be given you. While packages may be short, queens will be more plentiful with us.

Prompt Delivery Guaranteed on all Advanced Booked Orders.

2-lb. Pkg. Bees with Queen	3-lb. Pkg. Bees with Queen	Single Queens
1 to 10 at $2.95	$3.80	90c
11 to 50 at 2.80	3.60	85c
51 to 100 at 2.65	3.40	80c
101 to 500 at 2.50	3.20	75c

Garon Bee Co., Donaldsonville, La.

Telephone 8614 **Telegrams, Western Union**

Pettit's Package Bees With Queens

Who is Pettit? Why, Morley Pettit, first in America to bear the title of State Provincial Apiarist; Founder of the Apiculture Department at the Ontario Agricultural College; Practical honey producer from childhood; Successful shipper of bees in Georgia for eighteen years; Old enough to know how; Young enough to see that you get good service. Ask our many satisfied customers.

Prices for 1943 with queen in each package.

Quantity	Twos Each	Threes Each	Fours Each	Fives Each	Extra Queens Each
1- 23	$2.95	$3.85	$4.75	$5.60	$ .95
24- 99	2.80	3.65	4.50	5.30	.90
100-499	2.65	3.45	4.25	5.00	.85
500 up	2.50	3.25	4.00	4.70	.80

Book orders and reserve dates soon. Send Cash in US funds ten days before shipping date.

We offer prompt service

Best Young Queens — Gentle Italians
No Drones — Hard Workers
New Cages — Safe Arrival

Our best friends are satisfied customers.

Morley Pettit - - Tifton, Georgia, U. S. A.

THIS YEAR

We will have only queens of our U. S. Government strain. They are bred for Resistance, Leather-colored, Pure Italian. We are certain this is the most prolific strain we have ever seen. We are glad to have them to offer.

	Queens	2-lb. Bees	3-lb. Bees
1 to 5	$1.00	$3.00	$3.90
6 up	.80	2.80	3.60

R. L. BERNELL

R. 4, Box 270, New Orleans, La.

2 Years $1.50

American Bee Journal—monthly: published and edited by beekeepers for beekeepers. Full of pictures and tips on care of bees and selling of honey

—SAMPLE COPY FREE.

$1.00 a year, 2 years $1.50 in U. S. and Canada. Combined with Gleanings in Bee Culture, both magazines, ONE YEAR, $1.60. This offer good only in the United States

Address—

American Bee Journal, Hamilton, Ill.

Established 1873

CONTENTS

March, 1943

Care and Introduction of Package Bees —Edwin J. Anderson	129 - 132
Recent Investigations Show Need for Bees in Production of Vine Crops—J. C. Kremer	133 - 134
Making Packages Produce—Grant D. Morse, Ph. D.	135 - 136
New Information on Honey—M. H. Haydak and M. C. Tanquary	137 - 139
Spring Feeding of Bees—Dr. W. E. Dunham	140 - 141
Food for Busy Days—Mrs. Benj. Nielsen	142 - 143
What Can a Beekeeper Do in March?—E. D. Wirth	144
Apple Syrup, Another Competitor—Penn G. Snyder	144
More about Caloric Value of Honey—Mrs. Ed. Trimble	144 - 145
The Bee Journals: How I Do Enjoy Them —A. J. Bissinger	145 - 146
Beeswax Over 50 Years Old—Ed. T. Coumans	146
The Golden Glory Willow—Percy H. Wright	146
Second Glances—C. M. Isaacson	146 - 147
War-time Beekeeping Conference	148 - 151
From North, East, West and South	152 - 159
Editorials	160 - 162
Selective Service as it Affects Beekeepers	163
Gasoline Rationing as it Affects Beekeepers	163
The Washington Angle to a Beekeeper—L. M. White	164
Spinster Jane Says	165
Ohio State Meeting	166 - 167
Talks to Beekeepers—M. J. Deyell	168 - 169
American Honey Institute News Notes	170
Asked and Answered	171
Bee Industries Association of America	172
National Honey Association	172

Subscription Rates—United States, one year, $1.00; two years for $1.50; three years for $2.00. Single copy, 10 cents. Other countries, 25c per year additional for postage. Discontinuance—Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. Change of address—Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be sent by postoffice money order, bank draft, express money order or check. Contribution to Gleanings columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. Advertising Rates: Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' Reliability: While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

Entered as second class mail matter at the Postoffice at Medina, Ohio, Published monthly.

The A. I. Root Company, Publishers, Medina, Ohio

E. R. Root and M. J. Deyell, Editors; M. W. Hobart, Assistant Editor; H. H. Root, Associate Editor; D. C. Babcock, Circulation Manager.